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THE ITALIAN TEXTILE INDUSTRY

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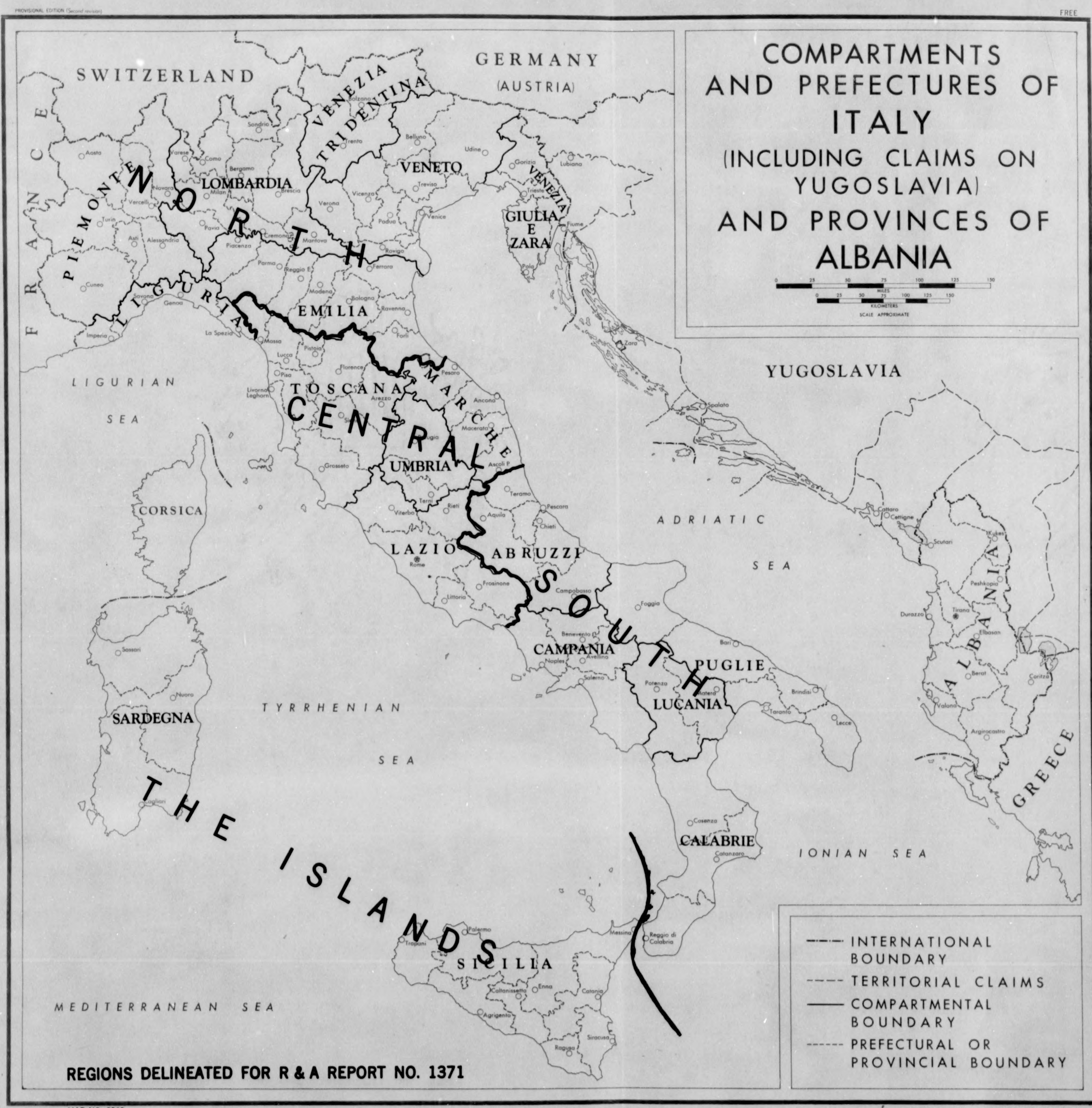

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CONFIDENTIAL

OFFICE OF STRATEGIC SERVICES
Research and Analysis Branch

R & A No. 1372

THE ITALIAN TEXTILE INDUSTRY

A picture of the Italian textile situation in pre-war years, an indication of changes resulting from the war, and an analysis of some of the problems which are likely to be encountered during the occupation period, together with recommendations for policies to be followed

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6 January 1944

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I. SUMMARY AND CONCLUSIONS

1. In pre-war years, the textile industry was Italy's most important industry in terms of employment, value of output, and value of exports.

2. It consists of a large number of small and medium-sized units most of which are located in the northern compartments.

3. The sources of power of the textile industry are almost entirely hydro-electric and form a highly interconnected network of small, well-scattered power plants.

4. Approximately 75 percent of the workers employed are women, many of whom come from surrounding agricultural communities.

5. The industry formerly depended largely upon imported cotton and wool, since domestic production of these fibers is small.

6. The output of artificial fibers has expanded so much in the past decade, however, that the dependence on imported cotton and wool has declined considerable. In fact, output of rayon and staple fiber during the war years has been so large that Italy, even though cut off from former sources of cotton and wool, has not only been able to meet all essential domestic needs but has even been able to export large quantities of textiles to other countries.

7. The artificial fiber industry has not eliminated Italian dependence on foreign materials, however, since the bulk of the woodpulp and the coal used in making rayon and staple fiber has had to be imported.

8. Because of Italy's position as a large net exporter of finished and semi-finished textile goods, the productive capacity of the textile industry is considerably larger than that necessary to meet purely domestic requirements. Furthermore, this capacity was not fully utilized, even in peak

years. Consequently, a substantial proportion of the productive capacity of the industry could be destroyed without impairing Italy's ability to meet her essential domestic requirements.

9. The Italian textile industry was under a certain amount of government regulation and control even in pre-war years. During the war period, this control has been considerably tightened and all stages of production and distribution have been brought under direct government supervision.

10. Clothing has been rationed in Italy since 1 November 1941, but rations have been adequate to meet the essential needs of the population.

11. The most important requirements for clothing during the initial period of occupation will be those of war victims whose wardrobes have been lost or destroyed. Small amounts of cloth, needles, and buttons will be needed by members of the lowest income groups in order to repair their scanty wardrobes. With this exception, the distribution of clothing during the initial period of occupation should be limited largely to the first group mentioned. Estimates are presented of textile requirements and of imports necessary to meet these requirements in both the relief and the rehabilitation periods.

12. To the extent that conditions permit, the Italian textile industry should be used to meet all domestic textile requirements other than those of the initial period of occupation. The bulk of the fibers needed for these textiles must come either from imported cotton and wool or from domestically produced artificial fibers. In either case, a number of considerations are involved; these are discussed at length.

13. The restoration of the Italian artificial fiber industry and the utilization of its output to meet domestic textile requirements would be of considerable value in creating income and employment and would represent an important step toward the economic reconstruction of Italy. During the rehabilitation period, however, there are likely to be many obstacles (such as shortages of coal, pulp, and electric power) that will

interfere with any significant utilization of the artificial fiber industry in meeting domestic requirements for textile fibers. Consequently, large amounts of cotton and wool will have to be imported.

14. During the entire period of occupation, distinctions should be made in the distribution of textiles, between those who can afford to pay for anything they receive and those who cannot.

15. Immediately after the occupation of an area, the army should set up depots from which clothing could be distributed directly to the most immediate cases of need. This method of distribution ought to be used only for a short period. As soon as possible, clothing should be supplied to regular retail stores, under the supervision of the occupation authorities. At a later date, a more comprehensive system of control should be established to deal with all problems of production and distribution. This system should be established and controlled by either the Italian government or by the occupation authorities, whichever appears more feasible at the time.

II. GENERAL CHARACTERISTICS OF THE ITALIAN TEXTILE SITUATION[1]

A. Consumption

In the period 1936-38, Italian domestic consumption of apparel-fibers (cotton, wool, silk, rayon and staple fiber) was about 200,000 metric tons annually, of which nearly one-fourth was imported, chiefly in the form of ginned cotton. Domestic consumption of flax, hemp, and jute in the same period amounted to approximately 100,000 metric tons.

On the surface, the wartime textile position does not differ to any very great extent from that before the war. Total domestic consumption of apparel-fibers in 1942 is estimated to have been 180,000 metric tons. Consumption of flax, hemp, and jute was about 80,000 metric tons.

It is apparent, therefore, that total supplies of fibers have not fallen very sharply; however, the composition of the total supply of apparel-fibers has changed considerably. In the pre-war period, consumption of cotton and wool (including waste) represented about two-thirds of the total consumption of apparel-fibers. In 1942, they represented only one-quarter of the total. Artificial fibers represented nearly all of the remainder.

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[1] For the benefit of the reader, a Glossary of technical textile terms is presented in Appendix E.

Supplies available for civilian consumption have declined much more than the decrease in total supplies would indicate. In the pre-war period, at least 140,000 metric tons -- and possibly more -- of the total supplies of apparel-fibers were available to meet civilian needs. In 1942, no more than 100,000 tons were available. Military and technical requirements accounted for the rest. Nevertheless, this reduced amount was sufficient to meet all really essential civilian needs.

B. Production of Textile Fibers

Italy is a very small producer of cotton and wool, and there is relatively little opportunity for expansion of production. In pre-war years, requirements for textile fibers were met mainly in two ways: first, by the import of large quantities of cotton and wool, and, secondly, by the development of a large artificial fiber industry, the chief purpose of which was to reduce dependency on foreign supplies of textile fibers.

With its entrance into the war, Italy was compelled to rely on its artificial fiber industry to an even greater extent than hitherto. Every effort was made to hasten the rate of expansion. Production was increased not only to meet Italian domestic textile requirements, but also to provide an export good acceptable to other European countries from which Italy wanted to import badly needed commodities.

C. Trade

Italy was normally a large importer of textile fibers and a large exporter of fabrics and finished textile goods. On balance, however, Italy was a net importer because imports of fibers were much larger than exports of finished goods. In 1938, the exports of the Italian textile industry were valued at 2.7 billion lire, or 34 percent of total Italian exports.

D. Employment, Wages, and Value of Output

The textile industry represented, in pre-war years, the largest single source of employment in Italy; it was one of the major contributors to Italian national income.

In 1938, 428,000 workers, of which nearly 75 percent were women, were directly employed in the Italian textile industry. (See Tables 1 and 2 in Appendix A). Another million workers, approximately, were employed in the clothing, wearing apparel, and house-furnishing accessories industries. (See Table 3 in Appendix A). Table 4 in Appendix A presents data on average hourly earnings in the various branches of the textile and clothing industries for the period 1935-1939.

The total value of the output of the textile industry was nearly 11 billion lire in 1938, as Table 1 indicates.

E. Regional Distribution of the Textile Industry

About 80 percent of the textile industry is located in Lombardia and Piemonte. The plants are scattered throughout these two compartments and thus can utilize the female labor of the agricultural communities. There are some centers of concentration, however, such as that of the wool industry in Biella and of the silk industry in Como.

F. Productive Capacity

Since Italy was normally a large net exporter of semi-finished and finished textile goods, her spinning and weaving industries have a productive capacity which is considerably larger than that necessary to meet domestic requirements. The supply of skilled and semi-skilled textile workers was also considerably larger than that necessary to meet only domestic needs. While it has been impossible to convert unutilized textile machinery to more important war purposes, the excess labor supply has largely been drained off into more essential war-time employments.

Appendices B, C, and D present data on the names, locations, officers, and equipment of the chief textile producers in Italy.

G. Coal Consumption

The coal consumption of the textile industry is currently about 800,000 tons annually. Of this amount, the production of artificial fibers consumes 600,000 tons.

H. Electric Power Consumption

In 1939, the textile industry consumed 1,324 million KWH. Consumption in 1942 was probably higher than this, because of the expansion in the production of artificial fibers.

Table 5 in Appendix A presents data on the consumption of electricity by the various branches of the Italian textile industry.

III. COTTON

A. Consumption

In 1938, Italian domestic consumption of cotton goods amounted to 107,800 tons.[1] By 1942, annual consumption had fallen to approximately 12,000 tons, all of which was required for essential military and industrial uses. The decline in supplies of cotton available for consumption has been considerably offset, however, by a large expansion in the production of artificial fibers.

B. Production of the Fiber

1. Output. Italy raised only 7,500 tons of cotton fiber in 1938, but, under the stimulus of government subsidies, production was expanded and reached 17,000 tons in 1942. Over 80 percent of the total cotton crop is produced in Sicily.

2. Varieties of Cotton Grown. The American Acala variety, Upland type, is now grown almost exclusively because it has been found to be most suitable to Italian soil and climate. Furthermore, this variety yields a good "middling" cotton of the type most commonly used in Italian cotton mills. Small amounts of the Stoneville variety are also planted in some parts of Sicily which are suitable for irrigation.

3. Government Control. The area devoted to cotton-growing in each province is determined by decree of the Ministry of Agriculture and Forestry in agreement with the Ministry of Industry, Commerce, and Labor (formerly called the Ministry of

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[1] "Consumption" is regarded as the sum of domestic production of cotton fiber and net imports of cotton and cotton goods.

Corporations), the Corporation of Textile Products, and the Textile Fiber Departments of the National Federation of Provincial Consortiums of Agricultural Producers. Cotton producers must obtain a "growing" license from the Textile Fiber Department of the Provincial Consortiums.

4. Marketing. The government requires that the producers deliver the entire crop of domestic cotton to the provincial pools, for the collective sale of the fiber, seed, and by-products.

The management of the cotton pool and the ginning of the fiber are also entrusted to the Textile Fiber Department of the above-mentioned Provincial Consortiums, under the supervision of the Ministry of Agriculture and Forestry and the Textile Fiber Department of the Federation. The pooled cotton, in pre-war times at any rate, remained the property of the suppliers who on delivering the cotton, authorized the pool authorities to sell for their account. The grower was responsible for all expenses connected with warehousing, ginning, etc. Each producer received a document indicating the quantity and quality of the cotton he had delivered. The operations of the cotton pool terminated on August 15th of each year and the cotton and cottonseed which had not been disposed of by that date formed part of the succeeding pool. All fiber produced and delivered to the pool could be sold by it only to the Italian Cotton Institute, which in turn determined the allocation of the fiber to spinners and weavers.

5. Payment of Producers. Advances were made to the growers on the basis of the document which recorded the quantity and quality of the cotton delivered. The amounts of such advances were established by the Ministry of Agriculture and Forestry. In order to finance such advances, the cotton pooled could be given in guarantee to authorized agrarian credit institutions, savings banks, etc., which were later refunded by the pool authorities with the money obtained from the sale of cotton.

C. Imports and Exports of Cotton and Cotton Goods

1. Fiber. Italy was normally a large importer of cotton

fiber. In 1938, imports of cotton fiber were 158,466 tons. The average for the period 1935-39 was 137,122 tons. After Italy entered the war, it was no longer able to obtain cotton from its chief sources of supply - the United States, India, and Egypt. Imports are now negligible; in fact, Italy has even been compelled to export part of its small domestic cotton crop to Germany.

2. Yarns, Fabrics, and Finished Goods. In 1938, Italy imported only 1,272 tons of cotton yarns, fabrics, and finished goods, but exported 66,082 tons of these articles. It was thus a net exporter of 64,810 tons. A similar situation existed in the other pre-war years. The chief markets for cotton cloth exports were Italian East Africa, Egypt, Argentina, Turkey, Syria, and Morocco.

Italy's present supply of cotton is so small that exports of yarns and fabrics are now probably negligible.

D. The Cotton-Textile Industry

1. Location of the Industry. Cotton-textile production is concentrated in Northern Italy, as reference to Table 6 in Appendix A will indicate. Of the total number of looms, 68 percent are located in the compartment of Lombardia, 21 percent in Piemonte, and 5 percent in Veneto; thus, these three compartments together contain nearly 95 percent of total loom capacity.

2. Consumption of Raw Materials. The spinning branch of the cotton-textile industry consumed 147,743 tons of cotton and 55,313 tons of waste and other fibers in 1938. Average annual consumption for the period 1935-39 was 142,855 tons of cotton and 55,940 tons of waste and other fibers. (See Table 7 in Appendix A). Present consumption of cotton is only about 12,000 tons. Estimates of consumption of waste and other fibers are not available, although they now represent the bulk of the fibers used by the industry. The steadily increasing admixture of substitutes such as "cottonized" hemp, waste, and artificial fibers has greatly lowered the quality of the product.

In 1938, the cotton-weaving industry consumed 89,047 tons of cotton yarn, 31,689 tons of rayon and staple-fiber yarns, and 18,419 tons of yarn made from other fibers. For the period 1935-39, average annual consumption was 88,890 tons of cotton yarn, 27,447 tons of rayon and staple-fiber yarn, and 17,206 tons of yarn made from other fibers. (See Table 8 in Appendix A). Today, yarn made from artificial and other fibers undoubtedly represents over 90 percent of total yarn consumption by Italian weaving mills. The consequent deterioration in quality has been substantial, as is confirmed by analysis of the clothing equipment of captured Italian soldiers.

It has been estimated that the cotton industry uses between 7,000 and 8,000 tons of dyes annually. Approximately 40 percent of these are sulphur dyes (of which about three-fourths are produced in Italy and one-fourth imported).

Other raw materials needed by the cotton industry are soap, solvents, starches, and caustic soda --- all of which are produced in Italy in adequate amounts.

Small quantities of coal, which did not exceed 100,000 tons in pre-war years, are required for finishing and other operations.

The electrical energy consumed by the cotton industry was about 583 million KWH in 1939. (See Table 5 in Appendix A). One hundred and thirty of the cotton mills have power plants of their own, nearly all of which are hydroelectric. In most cases, however, supplementary power is also obtained from public sources. These mills possess a total of approximately 2 million spindles and 23 thousand looms (40 percent and 15 percent, respectively, of the total number).

3. Output. The cotton-spinning branch of the textile industry produced 178,444 tons of yarn in 1938. Average annual output for the period 1935-39 was 173,977 tons. (See Table 9 in Appendix A). The weaving branch of the industry produced 95,754 tons -- or 691,021,000 square meters -- of "grey goods", i.e., unbleached white cloth; and 39,677 tons -- or 204,438,000 square meters --- of dyed goods. Total output was thus 135,431

tons or 895,459,000 square meters. The comparable figures for the period 1935-39 were 126,571 tons or 824,773,000 square meters. (See Table 9 in Appendix A).

4. Structure of the Industry. The cotton industry is by far the largest and most important branch of the Italian textile industry. In 1938, the cotton industry consisted of approximately 1,300 mills, of which some 400 were predominantly spinning mills and some 900 predominantly weaving mills. Most of the large firms, however, are engaged in both spinning and weaving.[1] A few concentrate exclusively on one or the other of the two processes. Some have the facilities for all stages of manufacture from spinning to dyeing and finishing. There is a large number of weavers, some of which produce for their own account while others work on a commission basis for other firms. Finally, there are some firms which confine their activities exclusively to the finishing processes (bleaching, dyeing, etc.), chiefly for the account of others.

5. Equipment. In 1938, the industry was equipped with 5,473,595 spinning spindles and 153,000 looms. Appendix B contains data on the equipment of the largest firms.

6. Activity of the Equipment. Table 10 in Appendix A presents data on the activity of the Italian cotton industry during the period 1935-39. An average of 85.7 percent of the total number of spindles in place were in operation at some time during each month of the period 1935-39. The average number of hours operated per week per active spindle was 66 hours, 22 minutes during the period 1935-39. The peak year was 1937, when each active spindle operated an average of 73 hours, 17 minutes. The weekly number of hours operated per spindle in place, when compared with the similar computation per active spindle, gives some measure of unused capacity. The average annual activity per spindle in place was 57 hours, 6 minutes per week in the period 1935-39.

The degree of activity in the weaving branch of the cotton industry was lower than that in the spinning branch; ;average activity for the period 1935-39 was 76.9 percent of the total number of looms. During this same period, each active loom operated an average of 56 hours, 33 minutes per week, while each loom in place operated only 43 hours, 35 minutes.

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[1] Appendix B presents pertinent data on the leading firms of the cotton textile industry.

Detailed information of present activity in the Italian cotton industry is not available.

7. Productivity of the Equipment. Average production of cotton yarn per spindle-hour was .0107 kilograms for the period 1935-39. Production of cotton cloth per loom-hour was .405 kilograms or 2.65 square meters.

8. Obsolescence of Equipment. Very little information is available on the degree of obsolescence of the equipment of the Italian textile industry. However, it is known that in 1938 and 1939, the textile industry admitted in several trade journals that its products were not up to the standards of the similar products of other leading textile nations and attributed this fact to the poor condition and, in some cases, to the obsolescence, of the textile machinery employed in Italy. The replacement of certain looms with the more modern equipment used in the United States, England, Germany, and France was advocated, together with encourmgement of the study of more efficient production methods. Nevertheless, in spite of these recommendations, there has been no unusual amount of replacement of equipment since 1939. In fact, replacements have, if anything, been considerably below normal because shortages of raw materials prevented anything like the full utilization of existing equipment, thus enabling a relatively more intensive utilization of the most efficient facilities.

E. Labor

The Italian cotton industry normally employed about 200,000 workers, approximately 75 percent of which were women. (See Tables 1 and 2 in Appendix A).

IV. WOOL

A. Consumption

In the period 1935-39, annual consumption of woolen and worsted goods in Italy was approximately 35,000 tons.[1] Present consumption is far below that of pre-war and is limited almost exclusively to military needs.

B. Production of the Fiber

1. Output. Production of wool in Italy is only about 8,000 tons annually (scoured basis).

2. Regional Distribution of Production. The regional distribution of wool production follows closely that of the sheep population. Approximately 60 percent of the total wool clip comes from the five compartments of Sardinia, Sicily, and Puglie in the South, and Toscana and Lazio in the central part of Italy.

3. Marketing. As in the case of cotton, the government controls the marketing of wool. Producers must deliver their entire clip to the wool pools for collective sale.

C. Imports and Exports of Wool and Woolen Goods

1. Raw Wool. In the period 1936-38, Italy was a net importer of about 15,000 tons of raw wool (scoured basis) and shoddy. Entrance into the war has shut Italy off from most sources of wool imports so that, at present, imports are limited to whatever rather small amounts -- probably no more than 4,000 tons -- can be requisitioned in Albania, Yugoslavia, and Greece.

2. Yarns, Fabrics, and Finished Goods. In 1938, Italy imported only 723 tons of woolen yarns and fabrics, but exported 16,572 tons of these articles. It was thus a net exporter of 15,849 tons. During the period 1936-39, it was a net exporter of an average of about 12,000 tons of yarns, fabrics, and finished goods. On the surface, it would appear that Italy exported nearly as much wool in the form of semi-finished and finished goods as were imported in the form of raw materials. This is not so, however, because the bulk of her raw material imports were virgin wool, while her exports of "wool" yarns, fabrics, and finished goods contained large parts of other fibers, chiefly rayon and staple fiber, although some cotton and hemp were also included. Since Italy now does not have

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[1] Goods of which the fiber content is wholly or mainly wool, either virgin or reclaimed.

enough wool to meet even the essential demands of the armed forces, it is highly unlikely that it is still exporting yarns or fabrics containing wool.

D. The Wool Textile Industry

1. Location of the Industry. Almost all of the factories of the wool textile industry are located in the compartments of Piemonte, Veneto, Toscana, and Lombardia. There are few plants of any importance in other parts of the country, although woolen goods are made in small mills in all sections of the peninsula and in the workshops of local craftsmen. Table 11 in Appendix A presents data on the regional distribution of the industry.

The main center of the industry is Piemonte, particularly in the districts of Biella and Vercelli in which woolen and worsted goods of every description are made. There is also a group of factories in the district of Torino which specializes in articles of high quality.

While most of the factories in Lombardia normally manufacture woolens, all branches of the industry are represented there, especially in the provinces of Milano, Bergamo, and Brescia. These mills produced large quantities of woolen cloth, flannels, blankets, and women's dress materials in pre-war years.

In Veneto, the chief centers are in the provinces of Vicenza and Verona. The bulk of the output comes from a small number of large-scale concerns, each of which employed 1,500 to 10,000 workers in pre-war times. The products cover a wide range, but worsteds were produced in larger quantities than woolens. The manufacture of ladies' dress materials and of knitting yarns was of special importance in this district.

The Tuscan woolen industry is centered at Prato, in the province of Firenze, where many small and medium-sized factories used large quantities of shoddy in making woolen goods, particularly blankets, flannels, etc. Most of the output of this district was normally intended for export. A few other woolen factories are to be found in the Casentino, and in the provinces of Arezzo and Perugia.

Outside of the zones mentioned above, there are a few minor industrial centers of some importance in the Marche, Umbria, Campania, the Abruzzi, and Sardinia.

2. Consumption of Raw Materials. The spinning branch of the wool textile industry consumed 21,459 tons of tops and scoured wool and 49,153 tons of recovered wool, cotton, and other fibers in 1938. Average annual consumption for the period 1935-39 was 25,778 tons of tops and scoured wool, and 49,220 tons of recovered wool, cotton, and other fibers. (See Table 7 in Appendix A).

It is interesting to note that while new wool represented only 34 percent of the total raw material consumption of the Italian wool industry, it represented about 60 percent of the pre-war fiber consumption of woolen and worsted mills in the United States. The quality of Italian wool goods was thus far inferior to that of American products. On the other hand, however, the Italians have had more experience in using inferior types of fibers. This experience may be an important consideration in determining what types of raw material should be imported to be processed in Italian mills during the period of reoccupation.

In 1938, the wool-weaving industry consumed 6,688 tons of worsted yarn, 22,854 tons of woolen yarn, and 19,210 tons of yarns of other fibers -- a total of 48,752 tons, less than 60 percent of which were yarns containing predominantly wool. (See Table 8 in Appendix A).

For the period 1935-39, average annual consumption was 7,567 tons of worsted yarn, 26,788 tons of woolen yarn, and 15,848 tons of yarns of other fibers -- a total of 50,196 tons, of which about 68 percent were yarns made wholly or partly of wool.

The Italian wool industry today depends very largely upon artificial fibers and shoddy, since present supplies of virgin wool are so small.

The industry normally used approximately 2,500 tons of dyes annually, most of which were produced domestically.

The wool textile industry is a very small consumer of coal. Pre-war consumption is estimated to have been only about 35,000 tons.

Consumption of electricity was 210 million KWH in 1939. (See Table 5, in Appendix A). Approximately 45 percent of the total number of both spindles and looms were in mills which had power plants of their own (nearly all hydroelectric), although most of these mills also obtained power from public sources.

3. Output. The Italian wool industry normally produced about 75,000 tons of yarn, of which 50,000 tons were woolen yarns and 25,000 tons were worsted yarns. The output of Italian weaving mills is estimated to have been between 35 and 40 thousand tons of fabrics per annum in pre-war, or between 140 and 150 million meters.

4. Mills and Equipment. In 1939, Italy had approximately 20 wool-combing plants with a total of 958 combs. More than half of the combs belong to a small number of large independent concerns, almost all of which are located in Piemonte. These plants work on a commission basis for other firms and are often connected more or less closely with weaving mills. The other combing plants are attached to spinning mills and are located chiefly in Piemonte, Veneto, and Lombardia. Almost all the combing machines are of the straight French model; Noble and Lister circular combs are not very numerous. Of the combing machines, 52 percent are in Piemonte, 20 percent in Lombardia, 19 percent in Veneto, 3 percent in Liguria, and the remaining 6 percent are scattered.

Italy has about 600 mills which were normally engaged in spinning woolen yarns. Some of these mills are quite large and are equipped with more than 20,000 spindles. In 1939, the spinning branch of the wool industry was equipped with 1,178,706 spindles, of which 620,017 were worsted spindles and 558,689 were woolen spindles. Appendix B presents data on the location and equipment of the leading firms of the wool textile industry.

About one-third of the woolen spindles belong to independent spinning mills, of which there are a large number of moderate size. There is a considerable degree of concentration of production in the district of Biella in Piemonte. These mills work for their own account and also for other firms. Their raw materials consist, to a large extent, of noils, cotton waste, recovered wool, and artificial fibers. Several independent woolen spinning mills are also to be found in Central and Southern Italy. Wool produced in the locality provides the bulk of the raw material of these mills.

Most of the woolen spinning mills, however, are attached to weaving mills, and differ in this respect from the mills which spin worsted yarns.

Some 47 percent of the woolen spindles are located in Piemonte, 19 percent in Toscana, 14 percent in Veneto, and 9 percent in Lombardia, making a total of 89 percent located in these four compartments.

The worsted spindles are distributed among some 80 mills, some of which had more than 50,000 spindles each in 1938. Most of the worsted spinning mills are independent concerns, unconnected with weaving mills. In many cases, however, their independence is largely formal, since they actually work as auxiliary concerns of large weaving mills.

A certain number of spinning mills have combing departments of their own; others purchase the tops or, more often, buy grease wool and have it scoured and combed on a commission basis by other factories.

Nearly 95 percent of the equipment of the worsted industry is distributed among three compartments: 57 percent in Piemonte, 28 percent in Veneto, and 9 percent in Lombardia.

Within the compartment of Piemonte, the worsted spinning mills are concentrated in the districts of Biella, Valsesia, Torino, Vicenza, and Brescia.

Although the wool weaving industry is distributed all over Italy, the chief centers are in the Northern compartments and Toscana. Approximately 45 percent of the looms are in Piemonte, 20 percent in Veneto, 15 percent in Lombardia, 18 percent in Toscana -- a total of 98 percent in these four compartments.

Power looms have almost entirely displaced hand looms, even in districts where weaving is still a home industry. In 1939, the weaving industry possessed 19,364 power looms, which were distributed among some 350 concerns, exclusive of the many craftsmen who work at home for the factories under a "farming-out" arrangement. Many of the factories are on a large scale, with anywhere from 200 to 2000 looms -- and in some cases even more.

A large number of the weaving mills are family businesses managed by their owners, and even in those cases where they are organized as joint stock companies they are generally in the hands of a family group.

5. Activity of the Equipment. Table 12 in Appendix A presents data on the activity of the machinery of the Italian wool textile industry. During the period 1935-39, an average of 83.3 percent of the total number of combs, 84.7 percent of the woolen spindles, 77.5 percent of the worsted spindles, and 72.9 percent of the looms were in operation at some time during each month of the period.

It is apparent from Table 12 in Appendix A that the wool industry normally did not use all of its equipment and even during years of peak demand, full utilization was not attained.

The wool textile industry is now operating at far below its pre-war level, not only because of a shortage of fibers, but also because of a scarcity of power and labor.

Unfortunately, there is no available information on the hourly productivity or degree of obsoleteness of equipment in the wool industry.

E. Labor

Excluding the workshops of craftsmen, the Italian wool textile industry employed over 90,000 workers before the war. (See Tables 1 and 2 in Appendix A).

V. ARTIFICIAL FIBERS

A. Introduction

Rayon and staple fiber represent over 95 percent of Italy's production of artificial fibers. Since the production of lanital and other artificial fibers, such as nylon, represent an almost insignificant part of the total, the discussion of artificial fibers will be confined almost entirely to rayon and staple fiber.

B. Consumption

The consumption of artificial fibers has increased steadily over the past decade, not only quantitatively, but also relative to total consumption of textile fibers. In 1942, domestic consumption of artificial fibers was approximately 135,000 tons, or about 70 percent of total consumption of textile fibers (excluding flax and hemp).

Rayon and staple-fiber fabrics have been the only type of textile material available to the normal consumer during the past few years. Supplies of cotton, wool, and silk have been reserved for military and technical requirements.

C. Production

1. Introduction. The problems surrounding the production and distribution of rayon and staple fiber are considerably different from those of cotton, wool, silk, and flax and hemp. For one thing, rayon and staple fiber are the products of the chemical industry and not a product of agriculture. Production is concentrated in a rather small number of plants, most of which are controlled by one firm, Snia Viscosa.[1] Furthermore, artificial fibers have not given rise to a large new type of spinning and weaving industry. Nearly all of the output of rayon and staple fiber is used by the cotton, wool, and silk mills as a substitute for the fibers which they normally employed,

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[1] A discussion of the officers and directors of Snia Viscosa is presented in Appendix D.

and this change in their pattern of raw-material consumption has required rather little change in the type of equipment employed.

2. Output. During the past decade, the Italian rayon and staple-fiber industry has expanded to such an extent that it has greatly reduced Italy's dependence on foreign sources of supply of cotton and wool. Production has risen from 51,047 tons in 1934 to an estimated 190,000 tons in 1942 - an amount which is greater than the combined average annual supplies of cotton and wool during the pre-war period 1935-1939.

3. Government Control. Many government decrees have been issued, rationalizing and standardizing various sections of the industry in order to ensure economy in labor, transport, fuel, and raw materials. The new measures of government control now in operation included the following:

a. Dyeing of rayon and staple fiber is restricted to only twelve colors.

b. The number of ends and picks per inch is limited to each factory's previous production.

c. The percentage admixture of rayon, staple fiber, or lanital with wool, cotton, silk, or other fibers is regulated.

d. The number of types of staple fiber has been limited to six, and a precise description of grade has been issued for each type.

e. The Ministry of Corporations (now the Ministry of Industry, Commerce, and Labor) has the sole right of developing new synthetic fibers, and no new products may be put on the market.

f. Supplies for the home market are limited to 61 percent of the staple fiber and 38 percent of the rayon output.

4. Location of Plants. The production of artificial fibers is heavily concentrated in Northern Italy. Appendix C lists the plants in the industry and gives a discription of each.

5. Raw Materials. Nearly all of the Italian rayon and staple-fiber plants employ the viscose process. This process uses bleached sulphite woodpulp at the ratio of 1.2 tons of pulp to every tons of artificial fiber. The production of rayon and

staple fiber in 1942 thus required 228,000 tons of pulp. Italy's domestic output of such pulp, however, is only 70,000 tons; consequently, the remaining 158,000 tons had to be imported, chiefly from Sweden and Finland.

The entire Italian output of bleached sulphite pulp comes from one plant, Torre di Zuino (now called Torviscosa), a subsidiary of Snia Viscosa. A more complete description of this plant is presented in Appendix C.

The most important chemicals used in the manufacture of artificial fibers are caustic soda, carbon bisulphide, sulphuric acid, zinc sulphate, and sodium sulphate, all of which are at present supplied by Italian chemical plants.

Three to four tons of coal are used in the manufacture of every ton of artificial fiber. Consumption of coal by the rayon and staple-fiber industry was thus about 650,000 tons in 1942. Some of the fuel is obtained from the domestic deposits in the Arsia region; the rest is imported from the German deposits in the Ruhr region.

It is apparent, therefore, that Italy's artificial-fiber industry has, in reality, not made the country free from foreign sources of supply, because the rayon and staple-fiber industry has to import nearly 70 percent of its pulp and much of its coal requirements.

The electric power consumption of the artificial-fiber industry was 296 million KWH in 1939 and is estimated to have been about 400 million KWH in 1942.

D. Marketing

The marketing of rayon and staple fiber is controlled by a central sales organization, S.A. Consorzio Produttori Italian Raion (Italrayon), in Milan. The purpose of this organization was declared to be the rationalization of the domestic and export markets through the assignment of quotas, the standardization of output, and the establishment of price agreements. Members are permitted to solicit business through their own agents, but are bound in the aforementioned factors. Because of its relative size in the industry, Snia Viscosa dominates the organization. After Snia Viscosa secured control over the Cisa and Chatillon companies by acquiring ownership of a majority of their stock, it in effect controlled the production of nearly 90 percent of the Italian output of artificial fibers and the marketing of all artificial fibers produced in Italy. A discussion of the officers and directors of Snia Viscosa is presented in Appendix D.

E. Imports and Exports.

In 1938, Italy exported 39,394 tons of artificial fiber and artificial waste, and 18,737 tons of fabrics and finished goods made from these materials - a total of 58,131 tons. In addition, many of the exports listed as "cotton" and "wool" in the trade statistics also contained some artificial fiber. Exports in 1942 are estimated to have been approximately 55,000 tons.

F. Equipment

The equipment used in manufacturing rayon and staple-fiber is, of course, altogether different from that used in any other branch of the textile industry. Much of the equipment is very specialized and difficult to replace. No attempt will be made in this report to discuss the equipment of the artificial fiber industry.[1]

G. Spinning and Weaving of Artificial Fibers

As has already been mentioned, rayon and staple fiber are ordinarily spun and woven on the equipment of silk, cotton, and wool mills, and a discussion of this equipment has already been presented.

H. Labor

At present, the artificial fiber industry employs about 50,000 workers.

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[1] For a detailed study of the equipment of an artificial fiber plant see: Report on Description of a Typical Rayon and Staple Fiber Plant, by Ervin O. Anderson, Economic Warfare Section of the Department of Justice, Washington, D.C., June 26, 1943.

VI. FLAX, HEMP, AND JUTE

A. Consumption

Italian domestic consumption of flax, hemp, and jute was approximately 110,000 tons in pre-war years. Domestically produced hemp represented the majority of this amount, although large amounts of imported jute were also consumed.

B. Production of Flax and Hemp

1. Output. No jute is grown in Italy. The production of flax is very small and averaged only 2,800 tons in the period 1935-38. Production of flax at present has expanded to approximately 8,000 tons. Italy is, however, a very large producer of hemp. For the period 1935-38, average annual production was nearly 100,000 tons. Present production is estimated to be about 120,000 tons.

The hemp grown in Italy is "soft" hemp and not to be confused with "hard" hemp such as Manila hemp.

2. Regional Distribution. Two compartments produce nearly 90 percent of the total output of hemp: about 55 percent of the hemp crop is grown in Emilia, and nearly 35 percent in Campania.

The production of flax is more evenly distributed over the country.

3. Government Control. The area devoted to hemp production in each province is determined by decree of the Ministry of Agriculture and Forestry in agreement with the National Federation of Consortiums of Hemp Growers. Through the dependent Consortiums, of which there is one in each of the hemp-producing provinces, the Federation issues the necessary permits to cultivate hemp.

4. Marketing. Under decrees of the Ministry of Agriculture, all hemp is now collected from the fields, roughly prepared, and taken straight to the Central Government warehouses where payment is made. This avoids all middleman's profits. All the chief hemp-growing districts have such storehouses; the largest one is at Ferrara. From these warehouses, the hemp is sent out to the spinners and weavers.

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C. Imports and Exports of Flax, Hemp, and Jute

In the period 1935-38, Italy was, on the average, an annual net exporter of 23,926 tons of flax and hemp fiber and a net importer of 46,475 tons of raw jute. Taking total imports of flax, hemp, and jute fiber altogether, Italy was a net importer of an average of 22,549 tons per year during this period. On the other hand, however, it was a net exporter of 14,297 tons of yarns, semi-finished and finished goods of flax, hemp, and jute during the period 1935-38. Thus, if these imports are taken into consideration, it was, on balance, a net importer of only 8,252 tons of flax, hemp, and jute. In 1942, however, Italy was a net exporter of nearly 50,000 tons, most of which went to Germany.

D. The Flax-, Hemp-, and Jute-Textile Industry

1. General Structure of the Industry. The flax, hemp, and jute industries are an important branch of the Italian textile trades. Flax and hemp are usually worked in the same plant. The machinery used for these fibers is capable of processing a wide range of fibers from heavy hemp to thin flax.

Until about 1935, jute was processed in separate plants. Since that year, however, other fibers have increasingly been used as substitutes for jute. In 1938, the jute content of the finished products of the industry amounted to nearly 100 percent; by 1939, however, the proportion of jute to total fibers consumed by the jute industry had fallen to less than 50 percent. The distinction between flax and hemp mills, on the one hand, and jute mills, on the other hand, has tended to become smaller as the difference in raw materials employed has decreased.

In 1938, the flax and hemp industry consisted of forty large spinning mills and ninety weaving mills. The jute industry consisted of 35 factories in that year.

The flax and hemp industry is dominated by one firm, the Linificio e Canapificio Nazionale of Milan. This firm produces about half of the Italian rope output and owns about twenty mills with a combined capacity of 117,000 spindles and 2,000 looms. Annual consumption of fiber and yarn is over 30,000 tons. The firm employs approximately 15,000 workers and is believed to produce 5,000 tons of twine, 5,000 tons of cord and rope, and a total of 15 million meters of hemp cloth. The firm also handled imported hard hemp in pre-war years. Because of the scarcity of cotton, this company - along with the rest of the industry - has probably greatly increased its output of cottonized hemp.

The rest of the flax and hemp industry is in the hands of smaller concerns, the more important of which also have their central offices in the Milan area.

2. Location of the Industry. Most of the flax and hemp mills are located in the compartments of Lombardia, Veneto, Emilia, and Campania. The jute mills are concentrated in Northern Italy and also in Toscana, Umbria, and Campania.

3. Consumption of Raw Materials. The Italian textile industry consumed an average of nearly 150,000 tons of flax, hemp, and jute in the period 1935-38. While small amounts of these fibers were consumed by the cotton and wool industry, most of the supply was utilized by mills which specialized in the manufacture of products made from flax, hemp, and jute. Consumption of flax and hemp in 1942 is estimated to have been approximately 80,000 tons. To this amount should be added some 12,000 tons of domestically produced broom fiber which is used as a substitute for jute by the jute spinning mills.

The consumption of coal by the flax, hemp, and jute industries is very small. In 1939, these industries consumed 100 million KWH of electricity.

4. Output. The standard products of the flax, hemp, and jute industries are string, thread, ropes, fishing nets, canvas for sails and tents, burlaps for wrapping, tarpaulins, transmission belts, and carpets.

The pre-war annual output of hemp and linen yarns is estimated to have been about 38,000 tons, of which 18,000 were wet-spun, 7,500 dry-spun, and 12,500 gill-spun. The output of finished products made from these yarns is estimated to have consisted of 8,000 tons of string, 10,000 tons of rope and cord, 3,000 tons of thread and string for shoemakers, and over 17,000 tons of fabrics and other manufactures.

5. Equipment. In 1939, the flax and hemp industry was equipped with approximately 135,000 spindles, 8,500 gill-spinning frames for the coarser counts, 24,000 twisting frames, 5,700 calenders, and 8,600 power looms. This machinery was supplemented by that of a large but unrecorded number of small firms operated by craftsmen.

6. Activity of the Equipment. Table 13 in Appendix A presents data on the number and activity of the equipment of the flax, hemp, and jute industry for the period 1935-39. It is apparent from this table that these industries normally did not use all of their equipment in pre-war. The degree of under-utilization of equipment is far more pronounced today.

E. Labor

The Italian flax, hemp, and jute industries normally employed about 50,000 workers, of which approximately 70 percent were women (see Table 2 in Appendix A).

VII. SILK

A. Consumption

Italian domestic consumption of silk was about 318 tons per year in the period 1936-38. Most of this silk came from domestically raised cocoons.

B. Production of the Filament

1. Output. Italy produced an average of 2,789 tons of raw silk per year in the years 1936 to 1938. Output in 1942 is estimated to have been 2,500 tons.

In most cases, cocoons are raised by peasants as an auxiliary livelihood.

2. Regional Distribution of Production. The production of silk cocoons is concentrated in the three northern compartments of Veneto (49 percent), Lombardia (30 percent), and Piemonte (9 percent).

3. Government Control. The government has set up a system for the compulsory pooling of all silk cocoons produced in Italy and for the collective sale of the pooled stock. Each year, the government establishes a guaranteed minimum purchasing price to be paid by the pool to the producers of the cocoons. A supplemental

payment is made to the producers whenever the average value of the collective sales made by the pool is in excess of the guaranteed minimum purchasing price.

The funds for the purchase of cocoons from producers are furnished by a group of regional banks, headed by the Cassa di Risparmio delle Provincie Lombarde. These banks grant the silkworm producers loans which are guaranteed by the government.

Producing and selling firms may market only such types, grades, and percentages of cocoons as are permitted by decree of the Ministry of Agriculture and Forestry.

All requests to operate new cocoon cooking and drying plants have to be submitted for approval by a commission composed of officials of the Provincial Consortiums of Agricultural Products, the National Federation of Silk Industrialists, and the National Fascist Board of Cooperation. Furthermore, establishments may process only the amount of cocoons for which authorization is granted.

The Royal Silkworm Institute and the Royal Experimental Stations for Sericulture aid the silk producers by collective planning, technical assistance, and collective financing.

C. Imports and Exports of Silk and Silk Goods

Italy was a net exporter of an average of 2,471 tons of silk and silk goods (including waste) during the years 1936-38. In 1942, it is estimated that she exported nearly 1,500 tons of silk, chiefly to Germany.

D. The Silk-Textile Industry

1. General Characteristics of the Industry. The Italian silk industry is very small as compared with the cotton, wool, and flax, hemp, and jute industries if the basis of comparison is the quantity of output and the relative contribution to Italian textile requirements. In terms of number of employees and value of output, however, the silk industry is as important as the wool industry (see Tables 1 and 2 in Appendix A). In 1938, the Confederation of Industrialists registered 1,326 silk plants.

With the exception of military goods such as parachutes, the pre-war output of the silk industry consisted mainly of high-priced luxury-goods, most of which were exported.

2. Location of the Industry. The operations of reeling, spinning, and weaving of silk are scattered throughout Italy, but have a high degree of concentration in Lombardia and Veneto. These two compartments possess 74 percent of the filatures and nearly 80 percent of the basins in Italy.

3. Consumption of Raw Materials. In addition to consumption of silk, the Italian silk-weaving industry consumes large quantities of rayon and other yarns made from other fibers (see Table 8 in Appendix A).

Some coal is required in the processing of silk, but the quantities are very small. Consumption of electric power was 52 million KWH in 1939.

4. Output. The Italian silk industry produced an average of 2,769 tons of silk filament during the period 1935-39. Of this amount, approximately 95 percent came from domestically produced cocoons and 5 percent from imported cocoons.

The silk-weaving industry produced an average of 8,230 tons of fabrics during this same period, but the silk content of the cloth was only 11 percent, on the average. Rayon represented 78 percent and the remaining 11 percent consisted of other fibers.

5. Equipment. Table 14 presents data on the number and activity of the machinery of the Italian silk industry. The industry is equipped with approximately 1,400,000 spindles, 24,000 mechanical looms, 5,000 Jacquard Vincenzi-Verdol machines for the manufacture of printed and impressed fabrics, and a number of other types of machinery. In addition to the above, the industry is equipped with several thousand hand-operated frames which are principally used in the manufacture of special fabrics such as tapestry work, upholstery fabrics, and the like.

6. Labor. The silk industry employed approximately 116,000 workers in pre-war years (see Table 2 in Appendix A).

VIII. RATIONING AND WARTIME DISTRIBUTION

A. Background

Italy did not enter the war until 10 June 1940; consequently, it had a longer period than the other European belligerents in which to build up stocks. Because of this late entry into the conflict and also because of large production of artificial fibers, Italy did not find it necessary to ration clothing until November 1941. Up to this time, restrictions had taken the form of standardization and limitation on the number of different types of products, rather than of direct rationing.

B. Standardization

At the inception of rationing on 1 November 1941, standardized "utility" goods represented about 75 percent of the production of civilian textiles, while the remaining 25 percent was high-priced luxury and export goods which were left unrationed. Spinning mills were obliged to adopt standardized production-methods and to make their output conform to an amended list, issued by the Government, of permissible types of products.

In January 1942, complete standardization was enforced and the remaining unrationed luxury-good production was curtailed. At this time, however, existing retail stocks could still be sold, but all stocks in the hands of manufacturers and wholesalers had to be held at the Government's disposal.

Early in 1942, it became necessary to improve the quality and lower the prices of these standard goods because they had proved very unsatisfactory.

The State Association of the Textile Industry now determines, in accordance with rules laid down by the Corporation Minister, the categories, types, and quantities of standard textile goods to be produced. Standardization has now been extended to cover footwear, hats, stockings, shirts, ties, tailored costumes, and all woolen goods.

C. The First Clothing Card

The textile-rationing system in its original form will be discussed in detail in the paragraphs below, because changes in the system since they have been in modification of the initial structure rather than in introduction of any entirely new structure.

The first ration card for textiles, leather goods, and clothing was modelled on the German card. It was valid for the twelve months from 1 November 1941 to 31 October 1942.

A total of 40,230,000 cards were distributed. There were five kinds of cards:

1-A Light brown, for males 15 years and over;
2-A Purple, for females 15 years and over;
3-B Bright green, for boys 5 to 14 years, inclusive;
4-B Scarlet, for girls 5 to 14 years, inclusive;
5-C Blue, for children of both sexes, 1 to 4 inclusive.

No cards were issued for children under one year, because babies' clothing was not rationed at first.

Each card had three different kinds of coupons:

1. Coupons Marked with Arabic Numerals. These coupons were valid for the purchase of yarns for knitting or crocheting, yard goods of all kinds for making clothing and underwear, finished articles of clothing, and footwear. The "A" cards contained 120 of these coupons, the "B" cards 96 coupons, and the "C" cards 72 coupons.

2. Coupons Marked with Roman Numerals. These coupons were valid for the purchase of household linen (bed and table linen, bathroom linens) and manufactured household-linens, decorative articles, carpets and tapestries, luggage, purses and wallets made of leather or skin. There were 30 such coupons in each of the five kinds of cards.

3. Coupons Marked with Letters of the Alphabet. Coupons A to F were valid for the purchase of yarns for sewing, embroidering, and mending. The purposes for which the other lettered coupons could be used were not announced.

D. Distribution of the Clothing Cards

The clothing ration cards were issued in the communities under the same conditions that had regulated the distribution of food cards. The only differences were that the clothing cards were not issued to children under one year, and were made out personally and issued to inmates of institutions except in cases where the institutions had special grants for clothing their inmates. In the latter case, members of institutions received cards when they were discharged from these institutions. Consumers who entered institutions were required to return their cards.

In order to obtain textile goods, institutions which had special endowments for the purchase of clothing or household linens for their inmates or guests had to file written requests with the competent Provincial Council of the Corporations, stating the reasons for the request and the number of ration stamps requested. The Council was then to issue such stamps after having ascertained, through careful investigation, that the institutions were in absolute need of making the purchase.

Articles of clothing and household linens which guests or convalescents of institutions had to buy at their own expense had to be purchased with the personnal card of the individual.

The regulations in force concerning the return of food cards by persons called to the armed forces or leaving the country, and also in the case of the death of the owner, were similarly required in the case of clothing cards.

E. The Use of Clothing Cards

All clothing cards could be used anywhere in Italy. They were not transferable nor could coupons be detached and transferred. Coupons which had been detached were not valid. Every seller was required to demand identification from customers and to detach from the card the coupons equivalent to the point value of the articles sold, as listed in Appendix G.

A holder of a ration card was, however, permitted to make purchases with his own card for other members of his family.

Mail-order purchases were also permitted. In this case, the consumer had to have the coupons detached from his card by the communal authority. Such coupons were to be sent to the vendor with a certificate testifying that the coupons were detached by the competent authority.

Coupons marked with numerals (either Arabic or Roman) had to be detached in the regular order of their sequence.

F. Obligations of the Merchant

At the time of each sale, merchants were required to enter into a ledger the amount of rationed merchandise sold and to retain the coupons detached from the ration books of purchasers. These coupons were to be cancelled with the stamp of the firm.

G. Validity of the Cards

The first clothing card was valid for the twelve-month period 1 November 1941 and 31 October 1942, regardless of the date of issue to the holder. Persons receiving their ration cards after the original distribution (for reasons such as absence from the country, etc.) received the same number of coupons as everyone else.

H. Use of Coupons

In each of the three four-month periods in which the card was valid, consumers were allowed to use no more than one-third of the coupons with Arabic and Roman numerals; however, coupons not used during any four-month period remained valid for following ration periods. During the first four-month period of rationing, there were special cases in which consumers could spend more than one-third of their total points.

I. Marriages

Communities issued stamps to newly-weds for the purchase of the following garments and yard goods:

Men

1 overcoat
1 suit
2 shirts
1 undershirt
2 pairs of drawers
6 pairs of socks
6 handkerchiefs
1 pair of shoes

Women

1 coat
2 dresses
1 chemise
1 apron
2 blouses
2 slips
2 pairs of drawers
6 pairs of stockings
6 handkerchiefs
1 pair of shoes

Furthermore, newly married persons could obtain coupons for the following household linens or for yard goods for making these articles:

2 pairs of sheets for a double bed
4 pillow covers and 4 pillow cases
2 table cloths (for six people)
6 napkins
6 towels
1 bedspread
1 quilt
1 mattress cover
6 kitchen towels
6 dish cloths

J. Infants

On documented request certifying an advanced state of pregnancy (six months) or after birth, communities could issue stamps for the following articles, in addition to the unrationed items of infant clothing (see Appendix G):

2 pillow cases
1 mattress cover
1 cover
2 sheets for crib
1 blanket
2 towels

K. Fascist Uniforms

Stamps were issued for the purchase of fascist uniforms on application of persons approved by the Federal Secretary of the Fascist Party.

L. Work Clothes for Workers and Artisans

Employers could request the Provincial Councils of the Corporations to issue stamps for the purchase of work clothes, overalls, aprons, and workshoes for the workers whom they employed at the time of the request. The request had to be accompanied by a list of the workers for whom these articles were intended and had to indicate, after each person's name, the number of his work book and of his ration book.

The offices of the Provincial Secretariat of the Trades could also obtain stamps by filing applications with a list of the artisans for which the clothes were intended.

M. Sport Clothes

The Provincial Councilors of the Corporations could issue ration stamps for rationed sportwear on receipt of a request approved by the Comitato Organizzatore Nazionale Italiano.

N. Government Purchases

The purchase by government departments of products which had to be bought with individual ration books could take place only when authorized by the Ministry of Corporations or by the Provincial Councils of Corporations competent for such area.

O. Corporate Committee

A Corporate Committee appointed by the Minister of Corporations and directly under him was given control of the production of and trade in textile goods and articles of clothing, and articles of clothing, and was to coordinate demand for textiles with available stocks.

P. Supplying of Merchants

After the 1 November 1941, the supplying of products to business concerns which sold either to the public or to wholesale dealers was governed by the following regulations:

1. Business concerns which sell to the public were to forward their requests for new stocks to the Provincial Council of the Corporations in whose jurisdiction they resided, and were to give the Provincial Council the coupons and stamps retained from their customers, which would certify the amount of goods sold.

2. Authority was given to business concerns to effect the consignment of coupons and stamps to the authorized Communal Office, which would give a receipt for them, indicating the quantity and quality of the goods as well as the value of the coupons delivered. The business concern could then forward its request for further stocks to the Provincial Council of Corporations by tendering the receipts in lieu of the actual coupons and stamps.

3. On demand of a business house, the Council was to issue orders for the delivery of goods having a total point-value corresponding to that of the coupons or stamps specified in the receipts tendered by the firm in question. Each order indicated the category of the merchandise which could be purchased therewith.

4. Business concerns which sold to the public at the start of the first ration period, and thus might not have a supply of coupons adequate to assure replacement of merchandise, could obtain, from the Provincial Council of Corporations, coupons to the limit of the quantity of products which the Provincial Council determined on the basis of the normal volume of business of the firm. The Councils were to keep a special account of the coupons released to each firm.

5. Business houses could purchase their merchandise from the factory or wholesale merchant of their choice. The factory (producer or wholesaler) had to indicate the maximum number of coupons in its ledger corresponding to the point value of the individual shipments made. As will be mentioned below, this provision has since been drastically changed.

6. The replenishing of wholesalers' stocks by manufacturers was to take place according to the regulations established by the Corporative Committee, mentioned above. The Corporative Committee was permitted to establish other procedures for the supplying of rationed goods to industry, to artisans, and to dealers.

7. The Provincial Councils of Corporations were compelled periodically to transmit to the Central Organization information concerning the credits accorded to the retailers of clothing and footwear, and also a recapitulation of the coupons released, including the total number of those coupons and the quantity and kind of merchandise for which they were issued.

8. Within the first five days of each month, manufacturers and wholesalers had to transmit an account of their stock of rationed products on hand at the end of the preceding month, as indicated by their respective statements of receipts and sales numbered to correspond with the receipts and sales of the same products during the month, and also the coupons received from their customers.

Q. The Second Clothing Card

On the expiration of the first clothing card, a second card was distributed. This second card is valid from 1 November 1942, to 31 December 1943 - a period of 14 months, as compared with a period of 12 months for the first card. A total of 40 million cards were issued.

Only two types of cards are now issued: one for children of ages 1 to 4, inclusive, and another for all persons five years or older. Unlike the cards of the first series, the current ration cards may be used by any member of the consumer's family.

The clothing card for children (under five) contains the same number of points as did the comparable first clothing card. The current card for persons over five has the same make-up as the 5-C card (for persons 15 years and older) of the first ration period. Although the position of children 5 through 14 years apparently has been improved, since they now get 120 of the "Arabic numbered" coupons instead of 96 as formerly, the point value of childrens clothing was raised so that total consumption of this age group was not increased. The extension of the period of validity from 12 to 14 months has resulted in a reduction of the quantity of textiles purchasable per month by all age groups because there has been no reduction in the point-value of the rationed articles. Furthermore, many articles formerly not rationed have since been put on the list of rationed goods.

Until the spring of 1943, babies' clothing was not rationed and therefore no clothing cards were issued for children under 12 months. On 2 April 1943, however, the paper Regime Fascista of Cremona reported that henceforth baby clothing was to be rationed, but that every mother would receive a sufficient supply of textile coupons to furnish her baby with all necessary clothing.

R. Reorganization of the System of Distribution

In April 1943, the distribution methods were reorganized. The "Interministerial Committee for Supply and Price," under the personal chairmanship of Mussolini, met to consider the problems of distributing textile goods to civilian consumers and to determine new measures for the organization and control of textile supplies from producer to consumer via the wholesale and retail trade. The committee also made regulations to prevent textile goods earmarked for civilian consumption from finding their way into illegal channels for sale "under the counter" at prices much in excess of the official ones.

The new regulations stated that manufacturers could no longer deliver direct to wholesalers and retailers, but that after all military and export priorities had been met, goods then available for civilian consumption were to be sent directly from the factories to the five newly appointed "National Distribution Offices", namely the Cotton, Woolen, Silk, Knitted Goods, and Ready-Made Garments Offices, respectively.

In accordance with the General Distribution Schedule established by the "Comitato Corporativo per la Distribuzione dei Prodotti Tessile e dell'Abbigliamento," these five Offices were to distribute available supplies to the existing provincial centers of the Merchant Associations and to special "warehouse trusts" which are identical with the "Standard-Sample Shops" instituted a few months earlier. These "Standard-Sample Shops" are those wholesalers who agreed to become agents for Government standard products by displaying and selling a specified proportion of "utility goods." These "Trusts" also supplied other wholesalers and private retailers. Supply quotas were - as formerly - based on the number of points received from retailers who, in turn, obtained them from sales to customers.

Thus, it appears that the depots of the Merchant Associations and the warehouse trusts virtually constituted a Government non-profit-making middleman whose position enabled it to check the quantity and quality of goods en route from producer to consumer.

At the end of August 1943, the system of distribution was again reorganized. The National Offices for Distribution, which had been set up by the Industrialists' Confederation, were to continue to function, however.

In order to speed up the supplies of textiles to the various provinces, manufacturers were to inform the National Distribution Offices each month of the quantities produced. A certain percentage of this production - most recently 20 percent - was to be held back to meet any urgent needs. Still further to speed up the flow of finished goods from manufacturer to retailer, manufacturers were to be allowed to despatch their goods freely to those wholesalers whose names were on a specially prepared list of the National Federation of Textile and Clothing Traders. There were 780 wholesale firms on this list. Sales to all other wholesalers had to be made in accordance with the previous regulations (i.e., through the National Distribution Offices).

Manufacturers were required to give the National Distribution Offices monthly details of all their sales.

IX. RECOMMENDATIONS FOR RELIEF AND REHABILITATION

A. Introduction

It seems most feasible to divide the clothing and textile program of the occupation authorities into two time-periods which will, in reality, overlap considerably. These periods may be called the "relief period" and the "rehabilitation period."

B. The Relief Period

1. The Problem. The first or "relief" period is that in which the chief problem will be immediately to supply clothing and blankets to destitute war victims and other needy persons. The magnitude of the supplies necessary for such relief will, of course, depend both on the intensity and the duration of hostilities and the consequent number of persons left without even enough clothing and blankets to protect them from sickness and disease, and also on the length of time elapsing after occupation before the relief authorities begin distributing clothing.

2. Clothing Requirements during the Relief Period. Any estimate of the probable size of these requirements must admittedly be very rough. However, they are rather unlikely to exceed 20,000 tons during the first six months of the relief period if the distribution of relief begins soon after occupation.

The estimate of 20,000 tons was arrived at in the following way. It is probable that not more than 20 percent of the Italian population will need relief in the form of clothing during the initial period. Since most of the needy persons will be urban dwellers, the percentage of the urban population receiving relief will be considerably higher than 20 percent. At the generous average of 2.5 kilograms (5.5 pounds) of clothing, blankets, etc. per person needing relief, total requirements amount to 20,000 tons.

Of this 20,000 tons, it is recommended that approximately 15,000 tons consist of cotton goods and 5,000 tons be of goods made from wool (including recovered wool). Main emphasis should be placed on clothing and blankets, although at least 15 percent of the textiles distributed during this period should be in the form of cloth for patching. Supplies of thread, needles, and buttons should also be provided. A rough approximation suggests that about one-half ton of these commodities combined will suffice.

These 20,000 tons are intended to meet only the really essential requirements of the population for the first six months. The Italian textile situation during the past few years has been sufficiently good so that, barring war damage, most civilians could live on their existing wardrobes for at least six months without any danger to health, or even any serious discomfort.

3. Dependence of Length of the Relief Period on Restoration of the Italian Textile Industry. The estimate of 20,000 tons of clothing and blankets for relief requirements is based on the assumption that within approximately six months after the completion of the occupation of Italy, the Italian textile industry will once more be able to meet most domestic needs --- provided that the industry is supplied with adequate raw materials. Obviously, this may not be the case. It may take much longer before the domestic textile industry can begin to meet Italy's requirements.

4. Stockpiles to Meet Unanticipated Needs. In anticipation of such an exigency, it is recommended that an additional 30,000 tons (approximately) of clothing, blankets, and linen be stockpiled in Italy (or North Africa); should the need be greater or the relief period be longer than estimated, adequate provision could then be made to meet these extra requirements without confusion or embarrassment.

On the other hand, should there be no need for drawing on these large reserve stocks, they will be available for immediate distribution in nearby countries such as France, Yugoslavia, and Greece when they are liberated by the Allies. Such a reserve stock will make it possible to meet essential needs in these countries much more quickly than if the goods had to be brought from the United States or Great Britain.

Another argument for reserve stocks is that there may be sound reasons, quite apart from those of relief, for a much larger distribution of textiles to the general public during this initial period. Such distributions should be justified, however, by assurance that it would aid in the recruitment of labor by the occupation authorities, induce peasants to dehoard food, and have a favorable psychological effect on the morale of other countries soon to be invaded by the United Nations. It should be emphasized, however, that any recommendation for quantities in excess of 20,000 tons during the first six months is probably based on such considerations and not on requirements necessary from the point of view of health.

5. Additional Relief Requirements if Restoration of the Textile Industry Is Delayed. As soon as possible after the Allied occupation, efforts should be made to utilize the Italian textile industry to meet all textile requirements of the Italian population. It is recommended that, if the domestic textile industry is unable to meet all of the country's textile requirements within six months after the occupation of Italy -- which will probably be the case -- the relief authorities should continue to send in clothing and other textiles at a rate such that imports plus Italian production make available to the Italian population 8,000 tons of textiles per month (excluding rope, sacking, etc.). The amount of textiles imported after the initial six months will thus depend on the speed with which the Italian textile industry can be put into effective operation.

6. Distribution in the Relief Period. As the Allied armies move ahead in Italy, supplies of clothing adequate to meet the most essential immediate requirements of the population should be brought into each occupied area. At first, it will be most simple to distribute clothing directly from army depots set up in each city and town needing such relief. Applicants for clothing should be required to demonstrate serious need and should be compelled to pay for the clothing except in cases where they can prove inability to pay.

As soon as possible, however, clothing should be distributed through regular stores under the supervision of the relief authorities. In order to continue to take care of needy people who are financially unable to buy clothing, certificates of need could be issued by the relief authorities. Each certificate should specify the garments to which the holder is entitled and all sellers of textiles should be required to honor these vouchers. The retailers could then deliver these certificates to the supply depots in the area and receive an equivalent amount of goods in return.

A more elaborate system of distribution is described in detail in Section G of Chapter IX. It is recommended that this more comprehensive system of distribution be established just as soon as feasible.

C. The Rehabilitation Period

1. The Problem. After the most immediate relief needs for clothing have been met, the primary consideration is the restoration of the Italian textile industry to activity sufficient for domestic requirements. The period in which this problem receives primary emphasis will be called the "rehabilitation period."

2. Necessity for a Technical Survey. It is strongly recommended that, as soon as a district comes under Allied control, a group of technical experts immediately evaluate the condition of the textile industry in that district. Relevant considerations are:

a. How many spindles, looms, and other types of equipment are in good working order in the district?

b. How many machines are now unusable but readily repairable?

c. What and how many repair parts are needed; how can they best be obtained; what repair facilities are available; what is the present productive capacity of manufacturers of textile equipment?

d. Are power and water facilities in such condition as will not interfere with the operation of all equipment?

e. Efforts should be made to register experienced textile workers so that some idea may be gained of the size and nature of the available labor force.

f. Efforts should also be made to contact the operators of the mills in each district in order to facilitate obtaining information of the sort listed above. It is hoped that Appendices B and D will be helpful in this endeavor.

3. Reasons for Utilizing the Domestic Textile Industry. For many reasons, it is advisable to meet Italian textile requirements from domestic production just as soon as possible. For one thing, while there are ample supplies of raw cotton and wool at the disposal of the United Nations, the processing facilities are already strained. It would be preferable to use the Italian textile industry rather than to place an additional burden on the textile industries of the United States and Great Britain. Moreover, the Italian textile industry might be used to produce textile goods for distribution in other near-by countries, such as Greece and Yugoslavia, which do not have highly-developed textile facilities. The utilization of the Italian textile industry will also create employment and income and will aid in the establishment and maintenance of law and order. It is strongly recommended, therefore, that the domestic textile industry be used to the maximum extent possible.

4. Adequacy of Processing Facilities in the Rehabilitation Period. The Italian textile mills are numerous and well scattered, even though they are concentrated within a few compartments. Consequently, it is probable that adequate processing facilities will be available to meet all Italian needs. However, if the amount of war damage should be large, it may be necessary to undertake considerable repairing and importing of parts. Such a situation could be somewhat mitigated by operating all the remaining equipment very intensively.

5. Desirability of Reconstructing the Industry. If it is found that the Italian textile industry has been practically demolished, it will be advisable to reconstruct the industry, even if this involves sending in considerable amounts of machinery such as spindles and looms, because, from any long-run point of view, it will be much less costly to restore the Italian textile industry than to continue supplying finished goods. Furthermore, considerations such as providing employment and income, maintaining law and order, and meeting the needs of other liberated areas all tend to support this recommendation.

D. Textile Raw Materials in the Rehabilitation Period

1. Availability of Domestically Produced Cotton and Wool. Italy produces only small quantities of cotton and wool. In 1942, the combined production of these fibers was only 25,000 tons. Since the Italian cotton crop is not picked until September, most of the 1943 crop (estimated to be 17,000 tons) should be at our disposal as a result of the invasion of Sicily and Southern Italy, which are the cotton-growing regions. (Sicily alone accounts for 80 percent of Italian cotton production). Because of war damage and labor shortages, part of the crop may have been damaged or left unpicked. A small amount may be withheld from the market by hoarders, although cotton was ordinarily a cash crop in Italy and relatively little was ever retained by the peasants for their own use. Nevertheless, at least 13,000 tons of cotton from the 1943 crop should be obtainable by the occupying authorities.

Annual production of wool is about 8,000 tons, although much of it is of rather poor grade. Since most of the shearing is done in the spring, little domestic wool is likely to be available before next spring. It is unlikely, however, that the textile industry will be operating much before then, so this may be no problem. Peasant hoarding will be a much greater problem than in the case of cotton. Probably no more than 5,000 tons can be expected to be collected from the peasants.

2. Inadvisability of Encouraging Domestic Production of Cotton. The production and delivery of wool should be encouraged by the occupation authorities. Much more doubtful is the question of expanding or even of maintaining the 1943 level of Italian production of cotton fiber. The soil and climate of Italy are not very suitable for cotton growing. Production has been brought to its present level only because of government subsidies. Unless the peasants themselves show a great inclination to continue growing cotton without any special subsidies, it would probably be wiser to encourage a transfer of much of this land, labor, fertilizer, and equipment to the production of food crops.

3. Inability of Domestic Production of Cotton and Wool to Meet Rehabilitation Requirements. During the first twelve months

after the initial relief period, Italian textile requirements will be nearly 100,000 tons, excluding requirements for rope, sacking etc. Domestic production of cotton and wool can be expected to provide no more than about 25,000 tons[1] of this amount. Italy is a very large producer of artificial fibers and hemp. The latter fiber, however, is not particularly suited for clothing. Therefore, the remaining 75,000 tons will have to come either from Italian domestic production of rayon and staple fiber or else from imported cotton and wool.

E. Import of Cotton and Wool vs. Use of the Domestic Artificial Fiber Industry

1. Advantages and Disadvantages of Utilizing the Artificial Fiber Industry. The occupation authorities must consider the following questions before deciding whether or not to operate the artificial fiber industry during the rehabilitation period.

a. Will the productive facilities of the rayon and staple fiber industry be adequate during the rehabilitation period? As has already been mentioned, total textile requirements during the first twelve months of the rehabilitation period are estimated to be 100,000 tons. Domestic production of cotton and wool can supply 25,000 tons of this amount. This leaves 75,000 tons to be supplied from either domestic production of rayon and staple fiber or imports of cotton and wool. Since the capacity (not to be confused with output) of the artificial fiber industry was approximately 210,000 tons in 1942, more than 65 percent of the industry would have to be destroyed before capacity would be a limiting factor. Unless the Germans make a conscious effort to demolish the industry -- as they very well may -- it is rather unlikely that war damage would exceed 65 percent of total capacity.

b. Will supplies of chemicals and pulp be adequate? If the Italian chemical industry is still functioning, almost all the necessary chemicals could be supplied domestically. On the other hand, if the industry has been demolished, then any production of rayon and staple fiber would be dependent upon the after the initial relief period, Italian textile requirements will be nearly 100,000 tons, excluding requirements for rope, sacking etc. Domestic production of cotton and wool can be expected to provide no more than about 25,000 tons[1] of this amount. Italy is a very large producer of artificial fibers and hemp. The latter fiber, however, is not particularly suited for clothing. Therefore, the remaining 75,000 tons will have to come either from Italian domestic production of rayon and staple fiber or else from imported cotton and wool.

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The one large Italian rayon pulp plant is Torre di Zuino. If this plant has not been destroyed and if adequate supplies of domestic pulpwood and chemicals are obtainable, output of pulp could probably be restored to the 1942 level of approximately 70,000 tons. This would provide sufficient cellulose for nearly 60,000 tons of rayon and staple fiber,[1] or 15,000 tons short of the required 75,000 tons. In order to produce the additional 15,000 tons of artificial fibers, 18,000 tons of pulp[1] would have to be imported from the United States or Canada (or from Sweden if Germany has been defeated by then).

On the other hand, should the pulp plant be entirely destroyed or should adequate supplies of domestic pulpwood or chemicals be unobtainable, the artificial fiber industry might have to import all its pulp requirements (90,000 tons[1] would be required to produce the necessary 75,000 tons of rayon and staple fiber).

Thus, if the bulk of the Italian textile requirements in the rehabilitation period are to be met from domestically produced artificial fibers, it will be necessary to import bleached sulphite pulp. The quantity will range from a minimum of 18,000 tons to a maximum of 90,000 tons, depending on the amount of war damage to Torre di Zuino and on the extent to which adequate supplies of domestic pulpwood and chemicals are obtainable.

Shortages -- both present and anticipated -- of bleached sulphite pulp in the United States and Canada are so great that it is very unlikely that any pulp can be diverted to meet Italian demands, especially inasmuch as the alternative exists of using cotton and wool instead of rayon and staple fiber. If Germany has been defeated by the time of the rehabilitation period in Italy, it may be possible to import pulp from Sweden, which at present supplies both Germany and Italy with large amounts of pulp. Barring this possibility, however, it appears that any utilization of the Italian artificial fiber industry will be limited to the supplies of pulp that can be produced by Torre di Zuino.

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[1] 1.2 tons of pulp are required for each ton of rayon or staple fiber.

c. Will supplies of coal be adequate to meet the requirements of the artificial fiber industry? Shortages of coal may well be the chief limiting factor in any attempt to utilize the Italian rayon and staple fiber industry. In order to produce 75,000 tons of artificial fibers and 70,000 tons of pulp - and then to spin and weave these fibers into cloth - approximately 550,000 tons of coal would be needed. The manufacture of 75,000 tons of cotton and woolen cloth, on the other hand, would require less than 50,000 tons of coal. Italy has always been a very large net importer of coal, and coal will have to be imported during the occupation period. The occupation authorities will undoubtedly endeavor to keep imports of coal to the barest minimum, particularly during the initial period of occupation and rehabilitation. Consequently, demands for coal for the production of artificial fibers and pulp will encounter many competing demands. In the allocation of the limited supplies of coal, it may be decided that the claims of the artificial fiber and the pulp industries should have a relatively low priority in view of the alternative of importing cotton and wool. Should this be the case, any large-scale production of rayon and staple fiber would be out of the question.

It should be emphasized, however, that shortages of coal may be a limiting factor only temporarily. The course of the war may alter the shipping situation to such an extent that large amounts of coal could be imported from England during at least the latter part of the rehabilitation period. Furthermore, as soon as Germany has been defeated, it could be compelled, as one of the terms of the armistice, to export sufficient coal to meet all of Italy's requirements including those of the artificial fiber industry.

d. What pressure groups are likely to oppose any attempt to utilize the artificial fiber industry? Quite apart from the problems discussed above, it is likely that any program to operate the Italian artificial fiber industry will meet opposition of two main sorts. First of all, the large Amercan and British producers of rayon and staple fiber would probably be opposed to the use of the resources of the United Nations to restore the industry that was their chief pre-war competitor in world markets. Secondly, the cotton interests in the United States -- and presumably those in Great Britain -- would also oppose any such program. Cotton growers fear the increasing competition of artificial fibers, as witness the opposition of Southern members of Congress to the use of high-tenacity rayon instead of cotton in airplane tires. Prior to the large-scale development of the Italian rayon and staple fiber industry, Italy imported large amounts of American cotton. The American cotton interests would like to see this situation restored. Any other program may face strenous opposition.

In spite of the probable opposition of certain pressure groups, however, there are strong reasons for utilizing and, if necessary, restoring the Italian artificial fiber industry as soon as shortages of coal and pulp can be overcome.

Much has been said about the inefficiency of the Italian rayon and staple fiber industry and its reliance on government subsidies. The truth of the matter is that in its earlier stages of development the industry did seek -- and obtain -- considerable encouragement and support from the government, but the industry grew to a point where it was able to sell a large part of its output in the world market and to do this profitably at a price that caused great anxiety to producers in other countries. Any study of the artificial fiber industry in the United States will reveal that the industry -- without any government subsidization -- has expanded steadily and has successfully met all competition from cotton and wool. The artificial fiber industry is here to stay, not only in this country but also in Europe.

The Italian textile industry, including the production of artificial fibers, is one of the main contributors to Italian income and employment. It is to be expected that Italy will continue to be a large textile and textile-fiber producing nation in the post-war era. Attempts to stifle the Italian artificial fiber industry are unlikely to be successful in the long run, even though short-run considerations may preclude the operation or restoration of the industry during the rehabilitation period.

The utilization of the domestic rayon and staple-fiber industry in the rehabilitation period would create employment and income not only for the large number of workers who depend upon this industry for their livelihood, but also for the workers in the pulp and chemical industries. It cannot be overemphasized that one of the most crucial guides to policy in the rehabilitation period should be the probable effect of any policy on the restoration of the basic elements of the economic structure of the country. Because the artificial fiber industry has played such an important role in the Italian economy, serious consideration should be given to the long-run as well as to the short-run aspects of the problem.

2. The Advantages and Disadvantages of Importing Cotton and Wool. An alternative to using the Italian artificial fiber industry would be to import 75,000 tons of cotton and wool, of which about 65,000 tons should consist of cotton, and to process it in Italian textile mills.

The comparative advantages of importing cotton and wool instead of using artificial fibers are as follows:

a. Because of their greater durability, cotton and wool would be generally more satisfactory for the type of utility fabrics that will be needed in the rehabilitation period.

b. The importation of cotton would meet with considerably less political opposition than would any program that utilized artificial fibers.

c. One of the objections to importing cotton is that it would require shipping space that is needed for more important purposes. However, to the extent that the rayon and staple fiber industry requires imports of pulp, the utilization of the Italian artificial fiber industry would also involve the use of shipping space. Furthermore, the production of artificial fibers requires large amounts of coal and if this coal has to be imported, the tonnage involved would be many times that required if cotton and wool were imported.

Imports of wool would probably have to come from the United States or from Great Britain. There are ample stocks of wool to meet this comparatively small demand.

Cotton could be obtained from three sources: Egypt, India, and the United States.

The chief advantage of importing cotton from Egypt, instead of from the United States, is that, because of the shorter haul, considerable saving in shipping space would result. Coastal shipping could be used and there would be little competition with shipping space needed for hauling more essential war goods from the United States and Great Britain.

Egypt has ample stocks of cotton on hand. At present (end of October 1943), Egyptian cotton stocks are estimated at 2,250,000 bales, or nearly 490,000 tons.

Italy, however, normally imported the bulk of her cotton from the United States and her mills are most familiar with our American Upland variety of cotton. Egyptian cotton -- even the short-stapled varieties such as Zagora and Ashmuni -- has longer and finer fibers than our American Upland variety. What is needed during the rehabilitation period is a type of cotton suitable for rather heavy utility goods. American cotton is much more economical for this purpose and it would be uneconomical to use cotton of as high grade as Egyptian under ordinary circumstances. The saving in essential shipping space may, however, more than offset these factors.

India also has large stocks of cotton on hand. At the end of October 1943 Indian cotton stocks were estimated to be approximately 3,000,000 bales, or 650,000 tons. Indian cotton is much shorter than Egyptian and could probably be used by Italian mills more readily than Egyptian cotton. The chief considerations then become those of terms of purchase and availability of shipping space.

If shipping space is available, there is much to be said for importing American cotton. In the first place, we have huge stocks of cotton of the type normally imported by Italy. Furthermore, from a purely political point of view, there will probably be bitter hostility from certain American groups if cotton given to Italy by the United States is purchased from Egypt or India instead of from our own cotton growers.

The selection between Egyptian and Indian cotton, on the one hand, and American cotton, on the other hand, may well depend on whether Great Britain or the United States is to bear the cost of supplying the cotton needed by the Italian textile industry.

3. Conclusion. The restoration of the Italian artificial fiber industry and the utilization of its output to meet domestic textile requirements would be of considerable value in creating income and employment and would represent an important step toward the economic reconstruction of Italy. During the rehabilitation period, however, there are likely to be many obstacles that will interfere with any significant utilization of the artificial fiber industry in meeting domestic requirements for textile fibers. Consequently, large amounts of cotton and wool will have to be imported.

F. Electric Power in the Rehabilitation Period.

One of the first questions to be asked about any program that visualizes the utilization of the Italian textile industry in the rehabilitation period is whether or not adequate electric power is likely to be available. Obviously, this question cannot be answered in advance. Certain comments are pertinent, however.

Only a very small fraction of the total number of Italian textile mills operate their own power plants.-- the others depend on public plants. In terms of total textile capacity, however, the mills which operate their own power plants control approximately 40 percent of the total number of cotton spindles, 15 percent of the cotton looms, and 45 percent of the wool spindles and looms. Most of these mills, however, do not produce enough power to meet all their needs and draw on public sources of power, particularly in times of peak activity.

The sources of power for the textile industry are scattered and no significant proportion of the productive capacity of the industry is dependent on any single power plant. The generating centers of the Italian power industry, which are located chiefly in Northern Italy as is the textile industry, are both numerous and generally small, and form a highly interconnected power network.

Since the plants are almost entirely hydroelectric, a cessation of imports of German coal would not interrupt the operation of the power industry. Consequently, the damage that would be expected in the ordinary course of the war would not be likely to paralyze the power industry, unless the Germans make a conscious effort to destroy power facilities.

There is evidence, however, indicating that the Germans as they retreat are destroying Italian power facilities. If the assumption is made that this course of destruction will be halted before the entire power system has been demolished, two immediate problems will confront the occupation authorities. The first will be to repair the damage as soon as possible. This, however, may require not only many months of effort but also the importation of much heavy electrical equipment since, under these circumstances, it is improbable that the Italian electrical-equipment industry would be in any position to meet all necessary reconstruction demands. The second problem would be that of the allocation among all competing uses of the power that is still available. This allocation must be determined by a set of priorities prepared on the spot.

It should be noted, however, that the textile and clothing industry used only 6.89 percent of the total Italian consumption of electric power in 1939, excluding electricity consumed in the manufacture of artificial fibers which was 1.87 percent of the total. (See Table 5 in Appendix A). Thus, even if the total supply of power should be considerably decreased by war damage, there may still be adequate power to meet the essential requirements of the textile industry if textile production is considered to have sufficiently high priority in relation to other demands for power to merit this allocation.

If the situation is found to be one in which practically all Italian power installations have been destroyed, then there is only one way in which to meet textile requirements; namely, to send in clothes and other finished textile goods until such time as the power situation has been restored to a degree which permits the operation of Italian textile mills once more.

G. Administration and Distribution in the Rehabilitation Period

In the relief period, the problems of administration and distribution will probably have to be solved by rules of thumb formulated in accordance with specific situations as they arise. In the rehabilitation period, however, the situation should permit the establishment of more orderly procedures.

If control over production and distribution of textiles is left in the hands of the Italian government during the rehabilitation period, the role of the occupation authorities will be mainly an advisory one, and will be confined chiefly to broad matters of policy rather than to techniques of administration.

On the other hand, the occupation authorities may themselves decide to set up and operate the entire textile program in the rehabilitation period. Should this be the case, the following suggestions may be relevant.

1. The Establishment of a Central Office. It is recommended that a Central Office forTextiles be established by the rehabilitation authorities. This Office should have regional branches in each compartment and local offices within each compartment.

The functions of the Central Office for Textiles should include all matters pertaining to the importation, production, and distribution of textile fibers and products.

2. The Staff of the Central Office. The Central Office should have a staff of approximately twenty members (excluding secretarial and clerical workers) most of whom should be American or British representatives of the rehabilitation authorities; members of the Italian textile industry should, at least in the initial stages of the program, be confined to a purely advisory capacity and should not be entrusted with the making and carrying out of important policies. This last recommendation is made because it is believed that it will be difficult to find native Italians who could efficiently and objectively devise and administer the broader aspects of a textile program in the rehabilitation period. Quite apart from questions of personal honesty and adherence to the Allied cause, most experienced Italian textile men would, consciously or subconsciously, be motivated by a

desire to operate the program according to criteria of what is best for the textile industry itself rather than according to criteria of clothing the Italian population most efficiently. Conflicts between these two points of view would be inevitable.

Native Italians should be employed to a greater extent in the regional and local offices. In all cases, however, there should be constant supervision of all aspects of the program by field representatives of the Central Office.

3. Recommendations for Peasant Deliveries of Textile Fibers. In order to induce farmers to deliver their production of cotton, wool, flax, and hemp, the following recommendations are made:

a. Farmers who deliver textile fibers to the occupation authorities should be assured not only a fair price but also that they will be provided with adequate supplies of finished textiles (including cordage and sacking). Otherwise, many of them may withhold deliveries and endeavor to meet their needs by home-spun products.

b. Adequate transportation and collection facilities should be provided.

c. There should be close cooperation and coordination of activities with the occupation authorities concerned with getting peasants to deliver food to market.

d. All possibilities of sale of textile fibers by peasants to black market purchasers should be investigated and prevented. This is not likely to be a major problem, however.

4. Recommended Method of Distribution. The following method of distribution is recommended because it is believed to be both efficient and easy to operate.

a. The allocation of fibers, yarns, and fabrics to the individual mills and clothing manufacturers should be strictly regulated by the Central Office for Textiles. Because of war damage to the industry, allocations will have to take into account a whole series of factors such as the relative productive capacities of the various manufacturers, the power situation in different areas, the available labor supply, proximity to areas of consumption, and similar considerations.

b. All finished goods (clothing, blankets, etc.) should be sent to government warehouses within each compartment (or district) in accordance with the anticipated needs of the population of the area.

c. From these warehouses, the goods should be supplied directly to retail shops which should be under sufficient regulation to assure efficient and equitable distribution of textiles to the public.

In this way, the control over distribution will be simple and direct. There will undoubtedly be considerable pressure from wholesalers and jobbers to restore the "normal channels of trade." This pressure should be firmly resisted, however, since under the conditions that will exist in the rehabilitation period, there will be no necessity for wholesalers or jobbers. The functions of a textile wholesaler or jobber are normally the following:

a. The wholesaler selects, from one season to another, those offerings on the market which he anticipates will be most in demand by consumers and hence by retailers. Through this selection, he helps guide production into those lines which are most likely to be in demand. Since the textile goods to be produced in the rehabilitation period should definitely be of a standardized nature, there will be no need for wholesalers to perform this function. The decision as to the types of goods to be produced should be determined by the Central Office for Textiles on the basis of its estimate of the relative need for various types of textiles.

b. The wholesaler ordinarily can provide the retailer with smaller lots and a much wider range of goods than would be the case if the retailer had to buy directly from factories which, in most cases, do not want to be bothered with small orders. Here again, with a very much limited range of goods and with stocks of finished goods strategically located in warehouses in each compartment or district, retailers can replenish their inventories from these stocks, and the warehouses should be organized in a way that will facilitate this procedure.

c. Another important function of the wholesaler in normal times is that of providing the retailer with credit. In the rehabilitation period, the important consideration is not one of maximizing profits but rather of assuring the optimum distribution of clothing to the population, and the granting of credit to retailers should be determined by this latter criterion. In the granting of credit, the Central Office for Textiles (or its regional branches) could be guided by the criterion of public welfare to a much greater extent than could a wholesaler whose primary consideration must be to maximize his profits.

In short, the functions that ordinarily justify the existence of the wholesaler and the jobber can be more efficiently performed, under the circumstances of the rehabilitation period, by the Central Office for Textiles and its regional offices.

5. Data on Current Production, Inventories, and Distribution. In order to formulate its policies, it is essential that the

Central Office always have complete and accurate data on current production, inventories, and distribution. These data can be most readily obtained by the establishment of a system the brief outlines of which are as follows. At the end of each week, each warehouse, producer, and distributor should fill out a short form with the following information:

a. Shipments received during the week and a very brief description of each shipment, e.g., 1,000 tons of scoured wool, from the Milano warehouse; or 100 suits type #3, 50 dresses type #14, and 100 pairs of socks type #18 received from Rome warehouse.

b. Production of yarn, cloth, waste, clothing, etc. during the week and a brief description of the types of products produced.

c. Shipments made during the week and a very brief description of each shipment, including its destination.

d. Stocks on hand as of end of date of report and brief description of the stocks.

More detailed information about such a system -- which has been employed very successfully by some mills in the Unites States -- can be provided upon request. Once such a system has been set up, it requires very little time or effort to operate and provides a complete weekly picture of the flow of production and distribution from raw materials through to the sale of the finished goods.

6. Rationing. It is recommended that ration cards similar to those now in use be issued and that coupons be deducted for all clothing distributed, whether by relief or by ordinary sale, during the rehabilitation period.

The issuing of the clothing ration cards should also be under the supervision of the Central Office for Textiles. The point values of specific items should not necessarily be the same as those of the present Italian clothing card. The Central Office for Textiles should set point values at levels that will encourage the purchase of the sorts of goods that are really needed by the population (such as overcoats and socks) and tend to discourage the purchase of goods regarded as less necessary (such as pajamas).

7. Desirability of a Distinction Between Relief and Ordinary Sale. In the distribution of clothing and textiles among civilians in the rehabilitation period, a distinction should be made between those people who are in dire need of such articles but who do not have the money with which to purchase them, and those people who should be expected to pay for any clothing they receive. There will still be considerable need for "handouts" during the rehabilitation period unless measures are taken to restore employment and income to a level that will enable the bulk of the population, particularly the urban dwellers, to be self-supporting.

H. Conclusion

An attempt has been made in this chapter to anticipate and analyze some of the problems of production and distribution that will arise in the period of Allied occupation. Recommendations for handling such problems have been advanced and it is hoped that they will contribute to a better understanding of the problems that will be involved. It must be emphasized, however, that many unforeseen circumstances will arise and that all recommendations for policy must be judged in the light of such situations as they actually present themselves.

APPENDICES

APPENDIX A

Table 1. NUMBER OF WORKERS AND VALUE OF OUTPUT OF THE ITALIAN TEXTILE INDUSTRY IN 1938

		Aggregate value of gross industrial income (in thousands of lire)		
Industry	Number of workers[a]	Value of materials	Value of wages and other productive services	Total value of output
Cotton	200,000	1,000,000	3,800,000	4,800,000
Wool	90,000	650,000	1,600,000	2,250,000
Rayon	30,000	b	b	1,400,000
Silk	70,000	500,000	2,000,000	2,500,000
Flax and hemp	23,000	b	b	600,000
Jute	15,000	80,000	150,000	230,000
TOTAL	428,000	b	b	11,780,000

a. Not strictly comparable with Table 2 because of difference in categories included.

b. No breakdown of total value available.

Table 2. DISTRIBUTION OF LABOR IN THE ITALIAN TEXTILE INDUSTRIES

	Total	Male
Cotton:		
Spinning and twisting of pure and mixed cotton	83,564	20,324
Weaving of pure and mixed cotton[a]	115,278	33,599
Total	198,842	53,923
Wool:		
Washing and carding of pure and mixed wool	45,800	20,953
Weaving of pure and mixed wool[a]	55,949	21,858
Total	101,749	42,811
Silk:		
Production of silkworm eggs	710	306
Storing, selecting, and drying cocoons	507	228
Silk drawing, twisting, and conditioning	75,736	6,112
Weaving of pure or mixed silk[a]	39,197	8,348
Total	116,150	14,994
Flax, hemp and jute:		
Spinning of flax, hemp, and other bast fibers	15,892	4,033
Weaving of pure and mixed flax and hemp[a]	13,732	3,197
Spinning and weaving of jute[a]	12,162	2,393
Twine, cords, and rope	8,356	5,438
Total	50,142	15,065
Total Cotton, Wool, Silk, Flax, Hemp, and Jute	466,883	126,794
Miscellaneous:		
Women's wear and military trimming	3,577	860
Tulle, laces, embroideries, etc.	41,215	1,745
Braid, shoestrings, nets, etc.	2,506	385
Linoleum, etc.	1,334	813
Carpets	3,086	1,257
Other textile industries, not specified	14,055	6,375
Accessories for spinning and weaving	2,830	1,876
Ribbons and elastic fabrics	6,373	1,149
Dyeing, printing, etc. of fabrics	17,635	13,435
Total	92,611	27,927
GRAND TOTAL	559,494	154,721

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[a] Including related operations like bleaching, dyeing, printing, mercerization, waterproofing, and finishing of fabrics.

Source: Annuario Statistico Italiano, 1941, p. 108

Table 3. DISTRIBUTION OF LABOR IN THE CLOTHING, WEARING-APPAREL AND HOUSE-FURNISHING INDUSTRIES

	Total	Male
Felts, felt hats, repairing................	20,974	10,323
Millinery..................................	14,701	750
Clothes....................................	458,253	131,317
Footwear...................................	304,890	273,943
Linen (shirts and underwear)...............	37,531	944
Mattress makers and upholstery.............	14,269	12,332
Corsets, etc.	2,688	216
Umbrellas..................................	3,496	2,239
Clothing accessories, e.g., ties...........	1,979	427
Ornaments and house-furnishing accessories..	3,614	808
Buttons....................................	2,089	649
Flags, pennants, etc.	1,182	313
Knitted underwear, socks, gloves, etc.	73,359	7,049
Leather and fabric gloves..................	6,629	3,466
Furs.......................................	3,843	1,300
Laundries, etc.	41,366	5,544
TOTAL	990,863	451,620

Source: Population Census of April, 1936. Annuario Statistico Italiano, 1941, p. 108

Table 4. WAGES IN THE ITALIAN TEXTILE AND CLOTHING INDUSTRIES
(Average hourly earnings in lire)

Year	Cotton	Wool	Silk worm culture	Silk reeling spinning	Silk weaving	Flax hemp jute	Arti-ficial textiles	Various textiles
1935	1.34	1.53	1.46	0.72	1.46	1.12	1.57	1.46
1936	1.37	1.56	1.51	0.75	1.44	1.15	1.64	1.51
1937	1.55	1.77	1.73	0.93	1.64	1.35	2.02	1.73
1938	1.55	1.96	1.82	1.03	1.68	1.38	2.05	1.82
1939	1.89	2.17	1.97	1.05	1.85	1.61	2.31	1.97

Year	Knitwear and stockings	Apparel	Hats	Tanning	Boots, leather-working	Buttons	Rubber goods
1935	1.19	1.31	1.95	2.00	1.46	1.05	2.06
1936	1.26	1.33	1.91	2.01	1.54	1.08	2.05
1937	1.51	1.53	2.15	2.39	1.85	1.24	2.46
1938	1.50	1.63	2.34	2.41	1.88	1.32	2.54
1939	1.69	1.82	2.32	2.68	2.07	1.54	2.78

Source: Yearbook of Labor Statistics, 1941, International Labor Office.

Table 5. CONSUMPTION OF ELECTRIC POWER BY THE ITALIAN TEXTILE AND CLOTHING INDUSTRIES IN 1939

Industry	Number of users	Energy consumed (in KWH)	Percent of total consumption of electric power
Cotton.........	1,293	582,656,949	3.69
Wool...........	1,183	209,815,739	1.33
Rayon..........	133	296,500,326	1.87
Silk...........	1,138	51,592,085	0.33
Flax, hemp, jute..........	615	100,121,844	0.63
Mixed textiles.	2,040	86,724,892	0.55
Total	6,402	1,327,411,835	8.40
Clothing industry	10,326	56,708,062	0.36
GRAND TOTAL	16,728	1,384,119,897	8.76

Source: Annuario Statistico Italiano, 1941, p. 115

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Source: *Annuario Statistico Italiano*, 1941, p. 115

Table 6. LOCATION OF THE ITALIAN COTTON INDUSTRY

Compartment	Yarn spindles	Twisting spindles	Looms	Workers (1930)
	(Percent of total)			
Lombardia	48	42	68	57
Piemonte	27	27	21	25
Veneto	13	13	5	8
Liquria	4	7	1	2.4
Italia Centrale	3	6	5	7.6
Italia Meridionale	5	5		
TOTAL	100	100	100	100

Source: Tremelloni, R., L'Industria Tessile Italiana, 1937, p.265

Table 7. CONSUMPTION OF FIBERS BY ITALIAN SPINNING MILLS, 1935 - 1939
(in metric tons)

Year	Cotton mills		Wool mills			Flax and Hemp					Jute	
	Textile fibers		Textile fibers			Textile fibers			Cordage fibers		Textile Fibers	
	Cotton	Waste and other fibers	Wool tops	Scoured wool	Shoddy cotton and other fibers	Flax	Hemp	Other fibers	Hemp	Other fibers	Jute	Other fibers
1935	169,780	28,118	20,613	11,718	41,367	2,266	29,056	2,607	2,917	1,678	54,642	--
1936	119,069	39,666	11,344	10,196	41,894	991	30,100	1,774	2,591	1,416	42,203	5,162
1937	146,729	67,877	17,202	7,878	56,264	1,393	35,227	2,430	2,832	1,902	44,794	11,211
1938	147,743	55,313	13,560	7,900	49,153	1,596	31,743	2,345	2,575	1,793	40,640	15,072
1939	130,958	88,722	17,395	11,083	57,423	2,027	38,793	1,900	2,643	2,013	25,410	31,932

Source: Annuario Statistico Italiano, 1941, p. 119

Table 8. CONSUMPTION OF YARNS BY ITALIAN WEAVING MILLS, 1935 - 1939
(in metric tons)

Year	Cotton mills			Wool mills			Silk mills			Flax and hemp mills			Jute mills	
	Yarns			Yarns			Yarns			Yarns			Yarns	
	Cotton	Rayon	Other fibers	Combed wool	Carded wool	Other fibers	Silk	Rayon	Other fibers	Flax	Hemp	Other fibers	Jute	Other fibers
1935	108,451	11,715	8,789	9,496	26,827	10,517	1,287	5,014	776	2,970	9,733	4,241	50,944	-----
1936	82,570	18,759	10,956	5,662	27,674	9,905	857	5,213	676	1,303	10,147	3,085	38,958	4,153
1937	87,232	33,527	18,869	7,724	28,558	17,630	1,037	7,893	951	1,614	10,126	3,819	40,956	8,485
1938	89,047	31,689	18,419	6,688	22,854	19,210	684	6,746	886	1,421	9,703	3,339	35,165	12,313
1939	77,153	41,543	28,998	7,764	28,026	21,976	813	7,344	974	1,666	13,309	3,942	21,915	24,334

Source: Annuario Statistico Italiano, 1941, p. 119

Table 9. ITALIAN PRODUCTION OF COTTON YARN AND CLOTH, 1935 - 1939

Year	Yarn	Grey goods		Dyed goods	
	(in metric tons)	(in thousands of meters)	(in metric tons)	(in thousands of meters)	(in metric tons)
1935	171,210	595,852	87,918	159,386	31,221
1936	140,377	573,722	79,638	140,303	27,189
1937	187,281	675,467	92,441	195,936	38,452
1938	178,444	691,021	95,754	204,438	39,667
1939	192,572	673,896	97,534	213,842	42,993

Source: Annuario Statistico Italiano, 1941, p. 117

Table 10. ACTIVITY OF THE MACHINERY OF THE ITALIAN COTTON INDUSTRY, 1935 - 1939

Year (average monthly)	Spinning					Weaving				
	Yarn spindles			Av. number of hours operated per week per spindle.		Looms			Av. number of hours operated per week per spindle.	
	Installed	Active				Installed	Active			
		Number	%	Installed	Active		Number	%	Installed	Active
1935	5,504,158	4,646,178	84.4	51h 40m	61h 12m	139,569	101,257	72.5	39h 19m	54h 12m
1936	5,471,760	4,263,919	77.9	45h 38m	58h 34m	139,379	95,198	68.3	35h 58m	52h 40m
1937	5,454,942	4,772,947	87.5	64h 7m	73h 17m	137,270	105,521	76.9	46h 23m	60h 20m
1938	5,473,595	4,841,053	88.4	60h 46m	68h 43m	136,085	111,309	81.8	47h 42m	58h 19m
1939	5,455,326	4,929,870	90.4	63h 20m	70h 5m	136,671	115,860	84.8	48h 33m	57h 16m

Source: Annuario Statistico Italiano, 1941, p. 117.

Table 11. LOCATION OF THE ITALIAN WOOL INDUSTRY

Compartment[a]	Workers	Combs	Worsted Spindles	Woolen Spindles	Looms
	(Percent of total)				
Piemonte	50	56	57.5	47.3	45
(Biellese)	(40)	—	(31.8)	(38.8)	(34)
Veneto	21	19.9	28.1	14.4	20
(Vincentino)	(17)	—	(22.6)	(11.9)	(14.4)
Toscana	14.5	—	0.6	18.8	18
(Prato)	(12)-	—	—	(15.1)	(15.8)
Lombardia	11	19.1	8.5	8.9	15
Rest of Italy	3.5	3.8	5.2	10.6	2
	100	100	100	100	100

a. Names in parentheses refer to the chief textile district of the compartment above.

Source: Tremelloni, R., *L'Industria Tessile Italiana*, 1937, p. 267.

Table 12. ACTIVITY OF THE MACHINERY OF THE ITALIAN WOOL INDUSTRY, 1935 - 1939

Year (average monthly)	Combing and spinning									Weaving		
	Combs			Worsted spindles			Woolen spindles			Looms		
	Installed	Active		Installed	Active		Installed	Active		Installed	Active	
	No.	No.	%	No.	No.	%	No.	No.	%	No.	No.	%
1935	924	786	85.1	631,816	486,532	77.0	530,876	438,526	82.6	19,853	14,655	73.8
1936	931	542	58.2	628,816	395,280	62.9	535,479	428,246	80.0	19,710	12,775	64.8
1937	939	849	90.4	622,578	511,332	82.1	530,758	464,519	87.5	19,316	14,841	76.8
1938	943	851	90.2	621,407	488,603	78.6	540,837	453,847	83.9	19,455	13,813	71.0
1939	958	886	92.5	620,017	538,297	86.8	558,689	500,122	89.5	19,364	15,110	78.0

Source: Annuario Statistico Italiano, 1941, p. 118

Table 13. NUMBER AND ACTIVITY OF THE EQUIPMENT OF THE ITALIAN FLAX, HEMP, AND JUTE INDUSTRIES

Year (average monthly)	Spinning					Weaving				
	Spindles			Av. number of hours operated per week per spindle		Looms			Av. number of hours operated per week per loom	
	Installed	Active				Installed	Active			
	Number	Number	%	Installed	Active	Number	Number	%	Installed	Active
					Flax and hemp					
1935	125,487	92,504	73.7	45h 11m	61h 17m	7,679	5,905	76.9	38h 8m	49h 36m
1936	127,247	92,161	72.4	40h 32m	55h 58m	7,819	5,235	67.0	31h 28m	4
1937	129,058	98,388	76.2	50h 34m	66h 20m	8,143	6,233	76.5	37h 29m	48h :
1938	129,841	102,290	78.8	49h 56m	63h 23m	8,310	6,342	76.3	35h 53m	47h 1m
1939	134,370	111,162	82.7	59h 44m	72h 13m	8,586	7,101	82.7	41h 41m	50h 24m
					Jute					
1935	87,379	64,739	74.1	41h 40m	56h 14m	5,166	3,701	71.6	36h 58m	51h 37m
1936	87,749	64,448	73.4	37h 29m	51h 2m	5,176	3,761	72.7	34h 16m	47h 10m
1937	87,920	68,084	77.4	45h 37m	58h 54m	5,221	4,226	80.9	40h 55m	50h 33m
1938	87.088	69,216	79.5	48h 0m	60h 23m	5,243	4,140	79.0	41h 38m	52h 44m
1939	87,650	70,861	80.8	50h 51m	62h 54m	5,278	4,039	76.5	38h 48m	50h 42m

Source: Annuario Statistico Italiano, 1941, p. 118.

Table 14. NUMBER AND ACTIVITY OF THE MACHINERY OF THE ITALIAN SILK INDUSTRY, 1935 - 1939

Year (Average Monthly)	SILK THROWING							
	Basins			Basin - days[a]				
	Installed	Active		Available	Worked		Lost	
							Through inactivity of plant	Through other causes
	Number	Number	%	Number	Number	% of Activity		
1935	49,334	14,702	29.8	295,584	80,184	27.1	197,325	18,075
1936	48,494	13,912	28.7	290,962	72,134	24.8	197,607	21,221
1937	45,732	16,603	36.3	274,416	83,006	30.2	161,942	29,619
1938	38,332	15,695	40.9	229,826	77,468	33.7	126,739	25,619
1939	36,413	14,970	41.1	219,261	72,051	32.9	120,376	27,750

Year (Average Monthly)	SILK TWISTING				SILK WEAVING				
	Spindles				Looms			Average number of hours operated per week	
	Installed	Active			Installed	Active			
	Number	Number	%	Of which rayon Number	Number	Number	%	Per Loom installed	Per active loom
1935	1,347,252	957,950	71.1	428,052	23,837	15,571	65.3	35h 8m	53h 48m
1936	1,354,938	882,513	65.1	489,149	23,808	14,788	62.1	33h 31m	53h 57m
1937	1,378,754	1,070,495	77.6	625,666	23,728	17,882	75.4	46h 42m	61h 57m
1938	1,427,877	900,008	63.0	506,448	23,871	16,775	70.3	40h 2m	56h 58m
1939	1,416,991	980,448	70.3	617,018	23,518	16,926	72.0	40h 40m	56h 30m

a. Number of basins available, or worked or lost, as the case may be, multiplied by the number of days in the season during which the cocoons are cooked.

Source: Annuario Statistico Italiano, 1941, p. 116

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APPENDIX B: DATA ON ITALIAN TEXTILE FIRMS

1. Cotton Firms

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consiglier Delegato	Other Data
Ajroldi e Pozzi-Industrie Tessili	Milano	Arconate e Borgomanero Busto Arsizio	506	---	---	---	345	Pozzi Giuseppe	---	
Antonia Castiglioni fur Luigi	Busto Arsizio	Arluno Baveno Busto Arsizio	250	10,640	---	---	400	Castiglioni Antonio	---	
Aziende Tessili Vnificate	Torino	Canavese Mathi Nole Rivarolo	2,190	13,156	15,200	1,960	---	Bonino avv Lorenzo	Freschi Alessandro	
Bassetti e Rossini	Milano	Bedero Valcuvia Gallarate	120	---	---	---	60	Bassetti Giovanni	---	
Bernardo Caprotti	Ponte Albiate	Ponte Albiate	330	---	---	---	170	Caprotti Giuseppe	---	
Bernocchi	Milano	Angera Besnate Cerro Cogozzo Legnano Maggiore S. Vittore Olona	2,756	127,168	14,236	---	4,000	---	Passardi rag Renato	Printing machines: 9
Calzifici e Cotonifici Roberto Ferrari	Brescia	Botticino Brescia Ospitaletto Bresciano Paderno Palazzolo sull' Oglio e Brescia	---	70,000	18,000	---	2,300	Serlini Federico	---	

1. Cotton Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Carlo Bassetti	Gallarate	Gallarate	286	---	---	---	120	Martelli dott Venturino	Armiraglio Dante	
Commerciale Fratelli Maino & C	Milano	Azzateg Cavaria Gallarate Gattinara Mornago	2,000	---	---	---	2,254	Introini Vgo	Maino Tonino	
Cotonificio Andrea Francesco Feo e C	Catania	Catania	---	---	2,000	---	50	---	---	Amministratore: Feo Andrea
Cotonificio Badalona	Caronno Milanese	Caronno Milanese	---	---	---	---	90	Castiglioni Antonio	---	
Cotonificio Bresciano Ottolini	Milano	Villanuova sul Clisi (Brescia)	---	65,000	6,000	---	1,850	Jucker ing Carlo	---	
Cotonificio Bustese	Milano	Arocnate Busto Arsizio Ponte Curone Voghera Vertova	3,000	70,000	---	---	3,000	Tognella Antonio	Schapira Carlo	
Cotonificio Cantoni	Milano	Bellano Besozzo Canegrate Castellanza Legnano	4,500	160,000	38,000	1,200	5,000	Restelli dott Piero	Jucker ing Carlo	
Cotonificio Caderna	Milano	Gratosoglio Monza e Agrate	667	23,868	5,000	---	900	Bellini rag Vito		
Cotonificio Cesare Macchi & C	Milano	Crenna Gallarate	750	---	---	---	450	Peja dott Guido	Macchi Cesare	

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1. Cotton Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Cotonificio Comense C.B. Bianchi	Como	Como	---	---	---	---	400	Bianchi rag. Carlo	---	
Cotonificio Cornigliano Ligure	Cornigliana Ligure (Genova)	Genova Cornigliano	---	---	---	---	300	Duerst Rodolfo senior	---	
Cotonificio Crespi Veneto Lombardo	Busto Arsizio (Varese)	Busto Arsizio Vanzaghello	270	---	---	---	160	Tognella Antonio	---	
Cotonificio d'Albizzate	Albizzate	Albizzate	206	---	---	---	100	---	---	Consigliere: Galeno Agostino
Cotonificio del Mella	Brescia	Ghedi (Brescia)	---	13,396	2,720	---	400	Vigano ing Carlo	---	
Cotonificio di Busto Arsizio	Busto Arsizio	Busto Arsizio	200	---	---	---	120	Maderna Ottorino	---	
Cotonificio di Casnigo	Casnigo	Casnigo e Colzate	---	---	---	---	---	---	---	Amministratore unico: Dell' Acqua Felice
Cotonificio di Lombardia	Milano	S. Angelo Lodigiano	---	18,028	---	---	300	Delesallo Claudio	Mieli Africano	
Cotonificio di Marghera	Venezia	Portomarghera	120	---	---	---	150	Fracca rag. Aurelio	---	
Cotonificio di Novi Ligure	Busto Arsizio	Novi Ligure	374	18,500	---	---	500	Cozzi Luigi	---	

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1. Cotton Firms

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Cotonificio di Perosa Argentina	Perosa Argentina	Perosa Argentina	---	33,940	5,722	750	---	Abegg Carlo	Abegg Werner	
Cotonificio di Ponte Lambro	Ponte Lambro	Pontelambro e Stezzano	660	---	---	80	520	Bonino on. avv Lorenzo	---	
Cotonificio di Ponte San Marco	Bresca	Ponte San Marco	---	15,700	4,312	---	450	Gabardi Edoardo	Tomè Gaetano	
Cotonificio di Pra	Genova-Pra	Genova-Pra	---	---	---	---	100	Tassara ing Filippo	---	Waste spindles: 2,686
Cotonificio di Roè	Milano	Roe	790	44,208	---	---	1,200	Frua Giuseppe	---	
Cotonificio di Solbiate	Milano	Cormano Legnano Solbiate Olona	---	90,000	14,000	100	---	Sacchi nob rag Guido	Gabardi nob Biagio	
Cotonificio di Strambino	Torino	Strambino (Torino)	---	30,500	---	800	800	Marsaglia dott. Giacomo	---	
Cotonificio Enrico Candiani	Busto Arsizio	Fagnano Olona Sacconago	500	---	---	---	350	Candiani rag Guido	Candiani Piero	
Cotonificio Etruria	Genova	Pistoia	---	12,500	---	---	350	Bertollo Pietro	---	
Cotonificio Felice Fossato	Milano	Sondrio e Monza	600	41,000	5,800	900	---	Fossati Bellani Alberto	---	
Cotonificio Fratelli Carozzi - S.A.	Milano	Clusone Villasanta	80	---	---	---	16	De Vecchi Vittorio	---	

1. Cotton Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Cotonificio Fratelli Dell'Acqua	Milano	Abbiategrasso Legnano Triuggio	2,000	---	400	---	1,750	Pozzi dott. Pasquale	---	
Cotonificio Fratelli Oltolina	Asso (Como)	Asso	310	---	6,000	---	300	Giudice dott. rag. Vincenzo	Brusa Antonio	
Cotonificio Fratelli Pozzi-Electa	Milano	Ponta Selva	600	20,000	2,000	150	---	---	Pozzi dott. Pasquale	
Cotonificio Furter	Milano	Casale Corte Cerro Gravellona Toce	400	21,000	5,000	1,200	---	Sozzani Cesare	---	
Cotonificio Giuseppe Pozzi	Busto Arsizio	Busto Arsizio	330	---	---	---	230	Pozzi Enrico	---	
Cotonificio Hüssy	Luino	Cassano Magnago Creva	502	---	2,000	500	---	Hüssy dott. Werner	---	
Cotonificio Legler	Milano	Ponte S. Pietro	1,038	34,980	3,096	2,500	---	Iegler Federico fu Gioachino	Legler Federico fu Federico	Carding spindles: 21,668 Combing spindles: 13,312
Cotonificio Morganti	Milano	Carate Brianza Piovega di Gemona	---	24,576	10,664	2,000	---	Morganti Antonio		Waste spindles: 910
Cotonificio Oliva	Genova	Rossiglione	---	13,000	5,000	---	350	Oliva avv Cesare	Ruisecco Agostino	

2. Cotton Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Cotonificio Piaggione	Genova	Piaggione (Lucca)	---	24,248	5,236	---	650	Croce Andrea Giuseppe	Croce Giacomo	
Cotonificio Poss	Milano	Cesate Saronno Uboldo	800	51,000	15,600	---	1,600	Poss Alessandro	---	
Cotonificio Reich	Milano	Bergamo Torre Boldone	588	16,568	---	488	---	Reich Giovanni	---	
Cotonificio R. Tinari	Lanciano	Lanciano	88	---	---	---	50	Tinari Raffaelle	---	
Cotonificio Riuniti Fratelli Poma Fu Pietro	Biella	Andorno Biella Miagliano Occhieppo Sagliano	3,000	40,000	---	1,200	2,600	Antonielli D'Oult Conte ing Carlo	---	
Cotonifici Riuniti (S.R.I.)	Milano	Lainate Laveno Rovereto	250	32,800	8,800	---	2,600	Valerio ing Guido	---	
Cotonifici Riuniti Oetiker-Tessitura di Brembate	Bergamo	Bergamo Pontirolo Nuovo	285	7,000	500	540	---	Sala Lamberto	Assandro Cesare	
Cotonificio Somaini	Milano	Lomazzo e Guanzate	---	75,000	---	---	1,800	Somaini on Francesco	---	
Cotonificio Udinese	Udine	Martignacco Udine	---	50,000	10,000	---	1,500	Morpurgo barone Elio-Senatore del Regno	---	

1. Cotton Firms

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Cotonificio Val d'Olona-Ogna Candiani	Milano	Cislago Marnate (Busto Arsizio) Olgiate Olona Parabiago Prospiano (Marnate) Sant'Antonio	1,800	---	---	---	1,800	Moiraghi prof Ettore	Schapira Carlo	Printing Machines: 17
Cotonificio Valli di Lanzo	Torino	Lanzo Pessinetto	---	75,084	18,956	4,200	---	Bona Osvaldo	---	
Cotonificio Valle di Susa	Torino	Borgone-S.Antonio Bussoleno Collegno e Rovigo Pianezza Susa Torino	574	253,152	44,906	---	5,500	Abegg Carlo	Abegg Werner	
Cotonificio Valle Ticino	Milano	Cerano Fagnano Olona Nese Trecate Turbigo Vanzaghello Vanzago Vittuone	3,000	72,000	5,000	---	4,000	Pavesi prof Pietro	Treccani Giovanni Senatore del Regno	Waste spindles: 3,000
Cotonificio Veneziano	Venezia Santa Marta	Pordenone Rorai di Pordenone Torre di Pordenone Venezia	742	140,000	---	---	4,000	Fracca rag Aurelio	---	

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1. Cotton Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Cotonificio Venzaghi	Busto Arsizio	Busto Arsizio e Cimbro (Vergiate)	665	20,352	8,392	---	1,000	Venzaghi Giovanni	---	Waste spindles: 770
Cotonificio Verbanese	Intra (Novara)	Pallanza (San Bernardino Monterosso)	---	21,500	4,158	1,000	---	De Lorenzi avv Lorenzo	---	
Cotonificio Vittorio Olcese	Milano	Campione Garda Carrù Casino Boario Clusone Cogno Lavagna Novara Verginate	---	400,000	68,000	12,000	14,500	Olcese Vittorio	Olcese Achille	
Cucirini Cantoni Coats	Milano	Acquacalda (Lucca) Intra e Ghiffa (Novara) Pegli (Genova) Ponte dera (Pisa)	---	150,000	---	---	4,000	Henderson James	---	
Cucirini Petri & Ferrari	Lucca	S. Marco	---	---	---	---	---	Ferrari rag Enrico	Petri Amedeo	
De Angeli-Frua	Milano	Aglie Legnano Milano Nossa e Saronno Omegna	4,250	92,000	5,000	33,820	5,000	Frua Giuseppe	Frau De Angeli Carlo	Printing machines: 61

1. Cotton Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Enrico ed Angelo Tronconi	Villasanta (Monza)	Villasanta	116	---	---	---	85	Tronconi rag Enrico	---	
Fabbriche Riunite Fratelli Francesconi	Lucca	Capannori	---	1,210	---	---	120	Francesconi Amerigo	---	
Filatura A. Brambilla di Verres	Milano	Verres	---	51,960	6,000	---	1,200	Brambilla arch Enrico	---	
Filatura Cotoni ed Affini	Roma	Lonigo	---	16,272	420	---	---	---	---	Amministratore: Levi avv. Giorgio
Filatura di Peregallo	Milano	Peregallo	---	15,000	4,000	---	350	Calcaterra Giuseppe	Bottelli ing Giovanni	
Filatura di Turate	Milano	Gerenzano Legnano	---	36,000	3,400	---	1,250	Brusadelli Giulio	---	
Filatura e Tessitura Meccanica Fossati Lamperti	Monza	L. Lorenzo (Monza)	520	6,300	---	---	700	Frigerio dott. Giulio	Saibene rag. Pio	"Operai": 700
Filatura Makò	Milano	Cordenons	---	78,000	32,000	---	1,000	---	Gavazzi dott Egidio	
Francesco Castiglioni	Busto Arsizio	Busto Arsizio	190	---	---	---	80	---	---	Unico Amministratore: Colombo Alfredo
Fratelli Calcaterra	Milano	Ferrara di Varese	---	27,476	4,704	500	---	Calcaterra Giuseppe	---	
G.B. Canesi	Monza	Monza	350	9,000	---	---	400	Canesi Ernesto	---	
Gioachino Zopfi	Milano	Bergamo Ranica	1,500	37,000	---	600	---	Luchsinger Jest	---	

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1. Cotton Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Giovanni Milani & Nipoti - S.A.	Busto Arsizio	Busto Arsizio Castiglione Olona Sacconago S. Bartolomeo di Brescia	1,200	20,200	---	---	1,400	Milani Luigi	---	
Giulini Ratti	Milano	Legnano	600	---	---	---	340	Crespi ing Modesto	Giulini Luigi	
Idroelettrica Gallicanese - Cucirini Italiani- "S.I.G.A."	Lucca	Gallicano Milano	---	2,000	---	160	---	Rovighi avv. Augusto	---	
Industria Filati	Gallarate	Gallerate	---	85,140	6,526	---	1,800	---	---	Amministratore unico: Carminati Carlo
Industrie Riuniti di Filati	Milano	Daste Fiorano Gromo	---	54,000	11,000	1,467	3,700	Albini ing Riccardo	---	
Industrie Tessili Vicentine	Vicenza	Chiuppano Debba Lisiera Vicenza	1,169	49,556	9,114	2,444	2,100	Rossi Carlo	---	
La "Sapt"	Milano	Monza	---	---	---	---	50	---	---	Brunschuig Silvano = Amministratore unico
Lavorazione Commercio Tessile	Milano	Parabiago	---	---	---	---	---	Pesenti avv Giuseppe	---	

1. Cotton Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Produced (H.P.)	Presidente	Consigliere Delegato	Other Data
Manifattura Achille Perego	Milano	Bienate di Magnago	326	---	---	---	200	Bernocchi dott. Antonio	---	
Manifittura A. Testori di G.	Novate Milanese	Novate Milanese	---	---	---	---	200	Testori Alessandro	---	
Manifattura Caccia	Milano	Busto Garolfo	---	---	---	---	---	---	---	Amministratore unico: Caccia Giovanni
Manifattura Castellanzese	Milano	Castellanza Venegono Inferiore	510	---	600	---	300	Volonté Isaia	Volonté dott. ing. Gaetano	
Manifattura Cotoni ed Affini	Roma	San Martino Bonalbergo	504	---	---	---	200	---	---	Amministratore: Levi avv. Giorgio
Manifatture Cotoniere Meridionali	Napoli	Angri Frattamaggiore Fratte di Salerno Napoli (Poggioreali) Nocera Pellezzano Piedimonte d'Alife	3,313	260,000	34,000	---	8,000	Paratore Giuseppe	---	Printing machines: 11
Manifattura di Cuorgnè	Torino	Campore Cuorgnè	---	94,000	17,000	2,000	---	Bocca avv. Ferdinando	---	
Manifattura di Ferno	Milano	Busto Arsizio Ferno	600	---	---	---	300	Broglio Pietro	---	
Manifattura di Gazzaniga	Milano	Gazzaniga	1,100	81,148	---	---	1,500	Bellora Giacomo	---	

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1. Cotton Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Manifattura di Gerenzano S.A.	Milano	Gerenzano	580	---	---	---	200	Meier Roberto	---	
Manifattura di Giaveno	Torino	Giaveno	102	19,356	3,977	---	610	Tedeschi ing Virginio	Ricciardi dott. Renato	
Manifattura di Legnano	Legnano	Legnano	---	63,244	7,226	---	1,400	Frua Giuseppe	Delle Piane Carlo	
Manifattura di Mozzate	Milano	Borghetto Lodig Mozzate (Como)	490	7,000	---	---	400	Bernocchi Vittorio	Scioli Giulio	
Manifattura di Pont	Torino	Pont	1,050	39,000	---	3,000	---	Mazzonis Federico	---	
Manifattura di Pontoglio, Sacconaghi-Taschini	Milano	Pontoglio	573	2,506	---	---	500	Molteni Ambrogio	---	
Manifattura di Spoleto	Milano	Spoleto	---	50,000	10,000	---	1,250	Gorli Paolo	---	
Manifattura Enrico Piantanida	Inveruno	Busto Arsizio Inveruno	640	---	---	---	300	---	---	Unico Amministratore: Piantanida Enrico
Manifattura Festi-Rasini	Milano	S.Giovanni Lupatoto Villa d'ogna	1,240	87,676	2,992	---	2,400	Fracassi di torre Rossano march. dott. Domenico, Sen. del Regno	Rasini dott. Giovanni	

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1. Cotton Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Manifattura Fratelli Bosio	Torino	S. Ambrogio di Torio	320	5,000	---	---	600	Badini Confalonieri nob. avv. Alberto	---	
Manifattura Gallo	Novara	Cilavegna Lesa Vercelli	300	30,000	---	600	1,150	Rossini avv. Aldo, Senatore del Regno	Rondo Enrico	Waste spindles: 8,000
Manifattura Mazzonis	Torino	Pralafera Torre Pellice	1,100	25,000	---	800	800	Mazzonis Federico	---	Printing machines: 10
Manifattura Rivolta e Crivelli-Dott. A. Mariani	Monza	Como Macherio Monza	130	---	1,800	---	100	Crivelli Gerolamo	---	
Manifattura Rossari & Varzi	Galliate	Galliate Ivrea Lonate-Pozzolo Romentino Trecate Turbigo Valle Ticino Varallino e Varallo Pombia	2,629	66,896	4,388	600	4,000	Sacchi rag. Guido	Varzi on. Ercole	
Manifattura Rotondi	Milano	Castelleone Novara Varallo Sesia	---	93,000	20,000	1,125	2,000	Delle Piane Carlo	---	
Manifattura Sebina Ravasio Umberto & C	Milano	Sarnico	70	---	---	---	68	Colombo Rinaldo	Ravasio Umberto	
Manifatture Tessili Luigi Rossi	Concesio	Concesio	150	---	---	---	150	---	---	Amministratore unico: Rossi Mario

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1. Cotton Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Manifattura Tessuti a Spugna	Milano	Busto Arsizio e Magnago	130 (mechanical)	---	---	---	200	Biffi ing Giuseppe	---	
Manifatture Toscane Riunite	Milano	Livorno Pontedera Vicopisano	888	35,628	5,476	---	---	---	---	Unico Amministratore: Pozzi dott. Pasquale
Manifattura Tosi	Milano	Busto Arsizio Castellanza Legnano Marcallo Milano Vittuone	2,600	---	---	---	---	Peja dott. Guido	---	
M.A. Sanguineti & C.	Genova	Campomorone Ceranesi	182	---	---	---	200	Samengo dott. Carlo	Sanguineti Mario Alessandro	
Michele Solbiati	Busto Arsizio	Busto Arsizio Lonate Pozzolo S.Antonini Ticino	620	---	---	---	200	---	---	Amministratore unico: Solbiati Leopoldo
Niggeler & Küpfer	Milano	Capriolo Chiari Palazzolo sull'oglio	519	52,458	---	---	1,960	---	---	Küpfer Ugo = Amministratore delegato
Pellegrino Pontecorvo-Manifatture Tessili Pisane	Milano	Pisa	850	---	1,720	---	1,000	Pontecorvo Massimo	---	

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1. Cotton Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Pironi Massarani & C.	Milano	Paderno Dugnano e Erba	120	1,000	---	---	150	Pironi Groppo Letizia	Massarani Aldo	
Rivolta Carmignani & C.	**Macherio**	**Macherio** Milano	120	---	---	---	50	Rivolta Aldo	Mezzetti rag. Ernesto	
Società Anonima Lucchese Industria Filati	Acquacalda di Lucca	Acquacalda	---	---	1,500	---	100	Petri Ansamo	Martini Ansano	
Società Commerciale Bossi	**Mortara**	Cameri (Novara)	400	---	---	---	300	Bossi Quinto	---	
Società Italiana Industria Cucirini	Pisa	Acquacalde di Lucca	---	1,300	---	---	190	Marconcini Guido Giorgio	---	
Stabilimenti Tessili Italiani	Milano	Aidussina Crespi d'Adda Fiume Veneto Gorizia Pordenone Ronchi dei Legionari Rorai Torre Venezia	5,596	418,084	48,462	10,500	17,150	Solza rag. Mario	---	
Successori Filippo Comi Fu Giuseppe	Bologna	Lugo Montebelluna Padova	68	2,036	---	---	---	Francia comi dott. Tito	---	
Tessitura Carlo Pernigotti	Campo-Ligure	Campo-Ligure	208	---	---	---	200	---	---	Amministratore unico: Pernigotti prof. rag Carlo

1. Cotton Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Tessitura di Bovisio	Bovisio Mombello	Bovisio Mombello	63	---	---	---	30	Zari Carlo	Tommasina ing Achille	
Tessitura di Castano-Ferrari & Deleuse	Milano	Castano Primo	350	---	---	---	120	Ferrari Gian Luci	---	
Tessitura e Candeggio Fratelli Visconti di Modrone	Milano	Somma Lombardo e S. Vittore Olona	442	---	---	---	170	Visconti di Modrone conte Giuseppe	---	
Tessitura Ernesto Tosi	Milano	Busto Arsizio	150	---	---	---	---	Brusa Ferdinando	---	
Tessitura Fumagalli	Milano	Arnate	116	---	---	---	100	Mezzetti rag. Ernesto	---	
Tessitura Jacquard Pastori e Casanova	Milano	Monza	250	---	---	---	150	Meda on. avv. Filippo	---	
Tessitura Rovelli & Marelli	Monza	Monza e Agrate Brianza	400	---	---	---	150	Marelli Emilio	Marelli rag. Luigi	
Tessitura Somma Lombardo	Milano	Somma Lombardo	---	---	---	---	---	Bellone Giacomo	---	
Tessiture Vignati	Legnano (Milano)	Legnano Villa Cortese e Vespolate	1,040	---	---	---	300	---	---	Amministratore unico: Vignati Fabio
Textor	Brivio	Brivio-Beverate Sordevolo	360	---	---	---	175	Rivetti Adolfo	---	

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1. Cotton Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Ugo Villa-Tessitura Meccanica	Gallarate	Gallarate	220	---	---	---	150	---	---	Amministratore unico: Villa Ugo
Unione Manifatture	Parabiago (Milano)	Cantalupo Intra Nerviano Parabiago Pogliano Possaccio Rho S. Ilario S. Lorenzo Trecate Trobaso Villastanza	4,921	213,104	20,252	---	6,500	Iabus avv Giovanni	---	
Wild & C.	Torino	Novara Piasco (Saluzzo)	1,408	66,900	---	600	2,000	Bonino avv. Lorenzo	---	

2. Wool Firms

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Bozzalla e Lesna	Coggiola	Coggiola Portula	423	5,000	---	1,350	---	Bozzalla Egidio	Bozzalla Silvio	Carding spindles: 5,650
Folli Bozzalla Fu Federico & C.	Crevacuore	Crevacuore	132	---	440	400	---	Peretti Achille	---	Lovatoi per Lana: 1 Carbonizzatrici: 1 Assortimenti da carda: 4 Fusi da cardato: 2,000
"Il Fabbricone"-Lanificio Italiano già Klinger & Kossler	Prato	Prato	983	---	---	---	300	Garbaccio on. Leone	---	Direttore generale: Cardelli rag. Dante
Fratelli Fila	Cossato	Coggiola Cossato	280	27,000	8,500	---	1,100	Fila Pietro Ettore	---	
Filatura Biellese	Biella	Gaglianico	54	5,000	2,000	---	170	Lesna Egidio	Segrè Francesco	Carding spindles: 1,700
Filatura di Grignasco	Grignasco (Novara)	Grignasco	---	30,000	---	2,423	2,000	Bozzalla Egidio	Oselia Domenico	
Filatura di Tollegno	Tollegno (Biella)	Tollegno	---	38,000	---	800	1,400	Schneider Daniele	---	
Imperus	Trivero Ponzone (Vercelli)	Ponzone Biellese	200	10,000	---	---	600	---	---	Amministratore Unico: Bernero dott. Virginio
Industrie Tessili Bresciane	Brescia	Sale Marasino Marone	62 (mechanical)	---	---	---	270	Zanella rag. Alfredo	Ballerio rag Giuseppe	
Lane Filate-A.I.F.	Torino	Torino	---	1,200	1,000	---	70	Brosio Fulvio	---	

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2. Wool Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Lanifici Ettore Magnolfi Fu E.	Prato	Prato	65	---	---	---	300	Baer Samuele	---	Amministratore delegato: Papp Gustavo Carding Spindles: 1,700
Lanificio Agostinetti & Ferrua	Tollegno	Tollegno	115	---	1,600	250	240	Schneider Daniele	Grosso rag. Guido	Carding Spindles: 3,150
Lanificio Angelo Ferrarin	Thiene (Vicenza)	Thiene e Sarcedo	68	---	---	200	375	Ferrarin Angelo	---	Combing Spindles: 3,000 Carding Spindles: 3,000
Lanificio Calamai	Firenze	Prato	130	5,500	1,000	---	400	Calamai dott Corradino	---	
Lanificio Cangioli	Prato Toscana	Prato Toscana Vaiano	75	2,500	---	---	200	Cangioli Alceste	Cangioli Vincenzo	
Lanificio Cardolle & Michel	Saluzzo	Saluzzo	103	---	1,912	150	450	Michel Cristino	---	Carding Spindles: 960 Combing Spindles: 3,528
Lanificio Cesare Tedeschi & C.	Torino	Torino	76	1,260	---	---	---	Chiantore Federico	Tedeschi Roberto	
Lanificio di Brugherio	Milano	Brugherio (Monza)	296	---	---	---	300	Marzotto Gaetano	---	
Lanificio di Cagli	Cagli	Cagli Roma	30	10,000	420	---	120	---	---	Amministratore Unico: Carcano Giovanni

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2. Wool Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power **Employed** (H.P.)	Presidente	Consigliere Delegato	Other Data
Lanificio di Gavardo	Mileno	Bostone (Brescia)	---	42,000	---	2,000	2,000	Sacchi rag Guido	Bertuetti Gaspare	
Lanificio di Manerbio	Manerbio	Manerbio	768	---	---	---	1,000	Marzotto Gaetano	---	
Lanificio **di** Summa	Milano	Somma Lombardo (Varese)	175	6,500	---	---	400	Mosterts Giorgio	---	
Lanificio di Stia	Firenze	Stia (Arezzo)	137	4,400	---	---	450	Lombard Luigi	---	
Lanificio di Strona	Strona (Vercelli)	Strona	66	---	---	---	70	Valle Enrico	---	
Lanificio Mossese	Mosso S. Maria	Mosso S. Maria	---	---	---	---	---	---	---	Amministratore Unico: Garbaccio on. Leone
Lanificio Pietro Cazzola	Schio	Schio	200	---	---	1,220	1,000	---	---	Amministratore Unico: Dall'Armi Antonio Carding Spindles: 6,000
Lanificio Rossi	Milano	Dueville Marano Montorio Pieve Rocchette Schio Torre Veronese e Piacenza	2,050	93,200	---	5,000	5,000	Treccani Giovanni-Senatore del Regno	Gavazzi dott. ing. Giuseppe	

2. Wool Firms (cont.)

Name	Location of Headquarters	Locations of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Lanificio Sella & C	Vallemosso	Vallemosso	79	---	---	---	300	Carrassi dei Marchesi Del Villar Tancredi	Buratti Romolo	Carding Spindles: 3,200
Lanificio Targetti	Milano	Desio Verano	300	14,000	---	---	1,500	Targetti ing. Raimondo	---	
Lanificio Varesi Lombardo	Lodi	Lodi	214	---	---	120	270	Ferrari ing Angelo	Olivari dott. Pietro	Carding Spindles: 5,000
Lavorazioni Lana ed Affini	Torino	Pollone e Biella	---	1,750	---	---	77	Botto Attilio	---	
Manifattura di Cossato	Cossato	Cossato	---	6,000	2,000	---	200	Gallo Mario	Gallo Roberto	Leviatan: 2 Pettinatrici: 40
Manifattura di Lessona	Biella	Lessona	---	4,500	2,000	---	200	Scavia Carlo	Zanon Gaetano	
Manifattura Lane di Borgosesia	Torino	Borgosesia	---	50,000	---	3,060	4,800	Magni ing. Franco	---	
Manifattura Lane di Romagnano Sesia	Romagnano Sesia	Romagnano Sesia	---	---	---	80	---	Botto Poala Ferdinando	Botto Poala Giovanni	
Manifattura Lane G. Marzotto & F.	Valdagno	Brugherio Manerbio Mortara Valdagno	1,223	---	19,044	3,430	4,230	Marzotto Gaetano	---	Carde: 21 Pettinatrici: 132 Colonne lavaggi: 5 Fusi per filatura cardata: 5,200 Fusi per ritorcitura cardata: 260 Fusi da pettinato: 49,952

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2. Wool Firms (cont.)

Name	Location of Headquarters	Location of Plants	looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Italiana Articoli Mohair Affini	Milano	Albino	---	---	---	---	---	---	---	Unico Amministratore: Hirschfeld Carlo Earnesto
Pettinatura Biella	Biella	Genova-Fegino	---	---	---	---	210	Fila Ettore	---	Pettinatrici: 32
Pettinatura di lane in Vercilli	Vercelli	Vercelli	---	---	---	---	1,500	Schneider Daniele	---	Amministratore delegato: Reda avv. Silvio Pettinatrici: 168
"Sait" (Società Anonima Industrie Tessili)	Torino	Torino	---	10,208	---	---	320	Schneider Daniele	Reda dott. Silvio	Pettinatrici: 12
"S.A.P.I.T." (Società Anonima Prodotti Industriali Tessili)	Biella	Biella	103	5,225	200	---	200	Sella dott. Andrea	Sormano dott. Ugo	
Tessitura Lane	Milano	---	---	---	---	---	---	Varzi on. Ercole	Varzi rag. Oliviero	
Tessitura lenot	Torino	Borgosesia e S. Maurizio d'Opaglio	350	---	---	---	150	Magni ing. Franco	---	
Anonima T.P.T.	Pray	Flecchia Pianceri Pray Torino	---	19,000	5,600	550	1,200	Trabaldo Togna Adolfo	---	

2. Wool Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
S.A. Valle & C.	Cossato	Cossato e Crosa	---	6,800	2,000	---	300	Valle Adolfo	---	

3. Flax, Hemp, and Jute Firms (including Rope Firms)

a. Flax and Hemp Firms

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Canapificio Bergamasco	Bergamo (Redona)	Bergamo (Redona)	50	---	---	---	140	Perolar Francesco	---	
Canapificio Partenopeo	Napoli	Frattamaggiore	---	---	---	---	---	De Maio dott. Arcangelo	---	Amministratore delegato: Buchy Ginevra
Canapificio Vincenzo Melloni	Bologna	Casalecchio di Reno	---	---	---	---	200	---	---	Amministratore Unico: Melloni Stefani Maria
Canapificio Veneto Antonini e Ceresa-Industrie Canapiere Italiane	Milano	Cento Crocetta del Montello Pieve di Cento Santa Maria Capua Vetere	---	5,300	3,800	---	1,100	Borletti Senatore-Senatore del Regno	---	
Canapificio Sinz	Ferrara	Ferrara	---	168	---	---	200	---	---	Amministratore Unico: Sinz rag. Giorgio

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3. Flax, Hemp, and Jute Firms (including Rope Firms)

a. Flax and Hemp Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Fabbrica Tele e Tovaglierie (Già Gastaldi, Terenzio & C.)	Milano	Merone	90 (84 Mechanical) (6 hand operated)	---	---	---	67	Gastaldi Ezio	---	
Fabbriche Telerie E. Frette & C.	Milano	Monza Sovico e Concorezzo	338 (325 mechanical) (12 hand operated)	---	---	---	220	Maggi Luigi	---	Filiali: 15
Filatura Canape Giuseppe Turner & C.	Sarno	Napoli Sarno	100	4,800	200	---	473	Turner Giuseppe Roberto	Carelli prof. Umberto	
Giovanni Bassetti	Milano	Biassono Rescaldina Trezzo	360	---	---	---	200	---	---	Consigliere: Bassetti Ermete
Giuseppe Crivelli	Milano	Fagnano Olona	150	---	---	---	50	Moro rag. Luigi	Gatti Silvio	
Industria Filati di Lino e Canape	Milano	Vimercate	---	---	---	---	---	Barbour Giovanni Milme	Belsten Archibaldo	
Industraia Italiana Canapa Verde	Verona	Nogara	---	---	---	---	---	Anti rag. Umberto	Granata Bruno	
Linificio e Nazionale	Milano	Borzoli Cassano Crema Casalecchio Concorezzo Fara Frattamaggiore Lodi Melegnano	2,000	100,000	17,000	9,000	21,000	Borletti Senatore-Senatore del Regno	Sessa Giulio	

3. Flax, Hemp, and Jute Firms (including Rope Firms)

a. Flax and Hemp Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Fabbrica Tele e Tovaglierie (Già Gastaldi, Terenzio & C.)	Milano	Merone	90 (84 Mechanical) (6 hand operated)	---	---	---	67	Gastaldi Ezio	---	
Fabbriche Telerie E. Frette & C.	Milano	Monza Sovico e Concorezzo	338 (325 mechanical) (12 hand operated)	---	---	---	220	Maggi Luigi	---	Filiali: 15
Filatura Canape Giuseppe Turner & C.	Sarno	Napoli Sarno	100	4,800	200	---	473	Turner Giuseppe Roberto	Carelli prof. Umberto	
Giovanni Bassetti	Milano	Biassono Rescaldina Trezzo	360	---	---	---	200	---	---	Consigliere: Bassetti Ermete
Giuseppe Crivelli	Milano	Fagnano Olona	150	---	---	---	50	Moro rag. Luigi	Gatti Silvio	
Industria Filati di Lino e Canapo	Milano	Vimercate	---	---	---	---	---	Barbour Giovanni Milme	Belsten Archibaldo	
Industraia Italiana Canapa Verde	Verona	Nogara	---	---	---	---	---	Anti rag. Umberto	Granata Bruno	
Linificio e Nazionale	Milano	Borzoli Cassano Crema Casalecchio Concorezzo Fara Frattamaggiore Lodi Melegnano	2,000	100,000	17,000	9,000	21,000	Borletti Senatore-Senatore del Regno	Sessa Giulio	

3. Flax, Hemp, and Jute Firms (including Rope Firms)

a. Flax and Hemp Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Linificio e Nazionale (cont.)		Creno Ponte S. Pietro S. Maurizio Sampierdarena Vicenza Villa d'Almè Viserba di Rimini Vimercate								
Manifattura di Casorezzo-Vincenzo Zucchi & C.	Milano	Casorezzo	180	---	---	---	110	Zucchi Vincenzo	Ciori Gaetano	
Manifattura Lombarda Lino e Canapa	Milano	Origgio	---	12,000	---	---	500	---	---	Amministratore Unico: Droulers Marco
Tessiture Napolitane Carlo Rossi	Napoli	Fratta Minore	170	---	---	---	112	Capece Minutolo Ferdinando marchese di Bugnano	---	
b. Jute Firms										
Industra Juta	Genova	Carrosio e Arguata Scrivia	264	5,264	---	---	235	---	---	Amministratore: Bruzzo ing Lorenzo
Jutificio Costa	Genova	Isoverde	224	3,492	---	---	500	Pratolongo conte dott. Rocco	---	
Jutificio de Fernex	Torino	Coazze	117	1,364	---	---	320	Biginelli Marcello	---	

3. Flax, Hemp, and Jute Firms (including Rope Firms)

b. Jute Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Jutificio di Piazzola sul Brenta	Piazzola sul Brenta	Piazzola sul Brenta	300	5,046	---	---	---	Bevilacqua avv. Federico	Baldoni rag. Baldo	
Jutificio di Terni	Roma	Terni	542	10,400	---	2,000	1,600	Schanzer prof. Carlo	---	
Jutificio di Vohera	Genova	Voghera	---	---	---	---	---	Visconti Ezio	---	
Jutificio e Canapificio di Lendinara	Lendinara (Rovigo)	Lendinara	100	1,816	300	---	600	Gentilini rag. Silvio	---	
Jutificio Mantegazza	Milano	Genova-Voltri	80	1,560	---	---	300	---	---	Amministratore Unico: Mantegazza Casare
Jutificio Napoletano	Napoli	Napoli	203	3,800	60	---	600	Reichlin Adolfo		Consigliere Direttore Scapagnini ing. Umberto
Jutificio Triestino	Trieste	Trieste	220	4,360	170	---	1,200	Segre dott. Guido	---	
Jutifici Riuniti	Milano	Aulla Borgo S. Dalmazzo Ravenna Spezia	780	13,000	---	---	1,500	Donegani on ing Guido	Galletti rag Guglielmo	

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3. Flax, Hemp, and Jute Firms (including Rope Firms)

b. Jute Firms (cont.)

Name	Location of Headquarters	Location of Plants	Looms	Yarn Spindles	Twisting Spindles	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Manifattura Italiana di Juta	Genova	Grugliasco (Torino) Ponte a Moriano (Lucca)	500	7,500	---	---	1,350	Visconti Ezio	Trabucco dott. Guido	
Stabilimenti per l'Industria della Juta	San Dona'di Piave (Venezia)	Venezia San Dona'di Piave	200	3,600	---	---	600	Coletti Isidoro Alberto	---	
C. Rope Firms										
Corderia Napoletana	Napoli	S. Anastasia	---	---	---	---	220	Marino avv. Eduardo	---	annual production: 10,000 Q.li
Fabbrica Cordaggi Giuseppe Angeli-S.A.	Trieste	Trieste	---	---	---	---	150	Segre dott. prof. Guido	---	
Industria Fibre Tessili Coloniali	Calolzio-Corte	Vercurago	---	---	---	---	90	---	---	Amministratore Unico: Franco Edoardo

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4. Silk Firms

a. Silk Spinning Firms

Name	Location of Headquarters	Location Of Plants	Spinning Spindles	Twisting Spindles	Basins	Looms	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Anonima per la Filatura e Toricitura in Italia	Milano	Bosisolo Ello Molinatto Valmadrera Valsorda	16,180	---	223	---	---	180	Dumoulin Roberto Eugenio	Dumoulin Roberto Leopoldo	
Bernardo e Lorenzo Banfi	Milano	Caneva Carnate Carpacco Dignano Palmanova S. Giacomo	17,376	---	883	---	---	---	Banfi Bernardo	Banfi Franco	
Fermo Coduri & C.	Milano	Ponte Zanano (Brescia)	5,500	---	---	---	---	300	de Montel nob. Giuseppe		Consigliere Direttore : Rivetti Battista
Filatura dei Cascami di Seta	Milano	Artegna Boltiere Jesi Meina Novara Tarcento Vigevano Zugliano	125,000	---	---	---	---	4,200	de Montel nob. Giuseppe	---	
Fratelli Boselli di Alfonso	Milano	Albarilla Caslino d'Erba Monguzzo	7,752	14,682	176	---	---	---	Boselli Ambrogio	---	

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4. Silk Firms

a. Silk Spinning Firms

Name	Location of Headquarters	Location of Plants	Spinning Spindles	Twisting Spindles	Basins	Looms	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Giuseppe Dubini & C.	Milano	Alserio Altavilla Bosisio Gorlago Orsenigo	17,568	15,540	136	---	---	---	Dubini ing. Enrico	---	reels: 136
Gutermann	Perosa Argentina	Perosa Argentina	---	---	---	---	1,500	---	Gutermann Guglielmo Rodolfo	Gutermann ing. Arturo	
Opifici Serici	Milano	Fano e Orbassano Fiumelatte	7,100	---	200	236	---	170	---	---	Unico Amministratore: Bosone Vittorio
Pietro Gavazzi	Milano	Bellano Bellano(Oro) Beseno Cernusco sul Naviglio Pergine Rassina Valmadrera Vendrogno	40,000	---	444	---	---	400	Gavazzi Lodovico	Senatore del Regnoi Gauazzi Emanuele	
S.A. Sete	Milano	---	---	41,200	720	---	---	250	De Montel Giuseppe	---	
Sete Cucirine Riunite	Milano	Milane Novate Milanese	5,000	---	---	---	---	200	Henderson James	Petri ing. Ottavio	

4. Silk Firms

a. Silk Spinning Firms

Name	Location of Headquarters	Location of Plants	Spinning Spindles	Twisting Spindles	Basins	Looms	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Setificio Castelletto Ticino	Milano	Castelletto Senago Milanese S. Colombano al Lambro Ticino	---	25,000	40	---	---	320	Chavent Joseph	Cugnasca Carlo	
Sigismondo Piva S.A.	Milano	Valdobbiadene	5,760	---	144	31	---	60,000 (KW annually)	---	---	Unico Amministratore Piva Celestino
Torcitura della Valcuvia	Milano	Cuvio (Varese)	---	9,200	---	---	---	120	Colli Giacomo		Direttore Amministrativo Colli rag. Cesare
Torcitura di Borgomanero	Milano	Armeno Besana Brianza Borgomanero Cannobbio Caramagna Castelrozzone Inferiore Montecremasco Pandino Sulbiate	81,900	---	---	---	---	650	Genelier Raimondo	Grüter Giovanni	

4. Silk Firms

a. Silk Spinning Firms

Name	Location of Headquarters	Location of Plants	Spinning Spindles	Twisting Spindles	Basins	Looms	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato	Other Data
Torcitura di Pianello Lario	Pianello Lario	Cremia Milano Montichiari Musso Pianello Lario	42,000	---	---	---	---	230	Anghileri Domenico	Redaelli Enrico	
Torciture Lombarde	Milano	Besozzo Centrisola Dresezzo Soresina Sala di Calolziocorti	---	56,000	659	---	---	300	---	---	Unico Amministratore: Arborini dott. Martino

4. Silk Firms

b. Silk Weaving Firms

Name	Location of Headquarters	Location of Plants	Spindles	Looms	Power Employed (H.P.)	Presidente	Consigliere Delegato
Balestrini e Morandi	Milano	Villaguardia Civello (Como)	---	104	60	Robbiani ing Amilcare	Balestrini Erminio
Bodmer & Gelpke	Germignaga	Germignaga	---	213	---	Gelpke Paolo	Travasoni geom. Renzo
Braghenti & C.	Como	Malnate	---	500	120	Andina avv. Alberto	Braghenti Luigi
Coudurier Fructus et Descher	Milano	---	---	---	---	Redaelli Alfredo Carlo	Collet Pietro
Cugini Jona	Torino	Torino	---	180	80	Jona Giacomo	Jona Eugenio
Egidio & Pio Gavazzi	Milano	Desio Melzo	---	1,900 (1,800 mechanical, 100 hand operated)	800	Dell'Orto avv. Egidio	Gavazzi Antonio
E. Osnaghi & C.	Milano	Lieto Colle	---	270	150	Genelier Raimondo	Osnaghi rag. Enrico
Fabbrica Comense Garze di Seta per Buratti	Milano	Como	---	70	50	Ansbacher avv. Luigi	Noseda Vittorio
Fabbrica Italiana Veli Andalusa Bornaghi	Milano	Vaprio d'Adda	---	14	40	Gariboldi Rosa ved. Bornaghi	---
Fabbrica Velluti e Peluches Alfredo Redaelli	Rancio (Lecco)	Mandello Lario Rancio	---	150	160	Sala dott. Giov Battista	Redaelli Alfredo

4. Silk Firms

b. Silk Weaving Firms

Name	Location of Headquarters	Location of Plants	Spindles	Looms	Power Employed (H.P.)	Presidente	Consigliere Delegato
"F.I.S.A.C."-Fabbriche Italiane Seterie e Affini-Como	Milano	Camerlata (Como) Cermenate Como Monte Olimpino Portichetto Vertemate	---	1,900 (1,800 mechanical, 100 hand operated)	200	Morandotti dott. ing Luigi	---
B.B.Trapolin-Successori Lorenzo Rubelli & Figlio	Venezia	Venezia	---	36	---	Rubelli Dante Zeno	---
Imprese Seriche Italiane	Como	Cabiate Carato Brianza Comense Mariano Robbiano	12,800	547	210	Cugnasca Giuseppe	---
Industria Serica Taroni	Como	Arcellasco Como Maslianico Mornello	15,000	300	250	Porlezza rag. Agrippino	Bossi rag. Ernesto
Industrio Tessili Inverigo	Milano	Inverigo	---	200	75	Gionnini avv. Alberto	Lo Cascio Renato
Luigi Bevilacqua	Venezia	Venezia	---	55 (Hand operated)	---	Bevilacqua Ildebrando	Bevilacqua Cesare
"Nivea" (Nuova Industria Velluti ed Affini)	Milano	Gerenzano	---	95	300	Redaelli Alfredo	Saltamerenda rag Remo
Seterie Ravasi	Milano	Como Oltrona San Mamette	---	140 (120 mechanical, 20 hand operated)	30	Ravasi Guido	---

4. Silk Firms

b. Silk Weaving Firms

Name	Location of Headquarters	Location of Plants	Spindles	Looms	Power Employed (H.P.)	Presidente	Consigliere Delegato
Setifici già Stehli & C.	Germignaga (Luino)	Germignaga Marchirolo	---	220	230	---	(Unico Amministratore: Stehli Zweifel-Roberto)
Società Italiana Industria Velluti	Milano	Bergamo	---	62	70	Sala Lamberto	Magnoni Danilo
Successori Giuseppe Cattaneo	Como	Como	---	600	150	Cattaneo dott Francesco Damiano	Cataluppi rag. Carlo
Tessile Oltrona	Milano	Oltrona S. Mamette	---	119	---	---	(Unico Amministratore: Songia rag. Carlo)
Tessitura della Seta Testa & C.	Romentino	Galliate Romentino	---	260	100	Agrati Giampaolo	Testa Antonio
Tessiture Seriche di Seregno	Cafasse Torinese	Seregno (Milano)	---	111	100	Tedeschi Amedeo	---
Tessitura di Olgiate Comasco	Olgiate Comasco	Olgiate Comasco	---	60	20	Peduzzi Ezio	---
Tessitura Serica di Bulgarograsso	Appiano Gentile	Bulgarograsso	---	104	50	---	(Amministratore Unico: Molteni Enrico
Tessitura Italiana di Novità	Milano	Olgiate Comasco	---	32	---	---	(Amministratore Unico: Giussani rag. prof. Giulio
Tessiture Edoardo Stucchi	Como	Galbiate Turate Caccivio	8,900	500	180 KW	Cantoni avv. Angelo	(basins: 40)

4. Silk Firms

b. Silk Weaving Firms

Name	Location of Headquarters	Location of Plants	Spindles	Looms	Power Employed (H.P.)	Presidente	Consigliere Delegato
Tessiture Seriche Bernasconi	Cernobbio (Lago di Como)	Cagno Cantello Cernobbio Giussano Figliaro Maccio Morbegno Piazza S. Stefano Solbiate	---	2,100	700	Scalini dott. Enrico- Senatore del Regno	---
Tessiture Seriche di Seregno	Cafasse Torinese	Seregno (Milano)	---	111	100	Tedeschi Amedeo	---

5. Other Textile Firms

a. Asbestos Firms

Name	Location of Headquarters	Location of Plants	Power Employed (H.P.)	Annual Production	Presidente or Unico Amministratore	Consigliere Delegato
Capamianto (Societa Anonima Italiana)	Torino	Torino	---	1,500 tons	Gori dott. ing Gino	---
Italo-Russa per l'Amianto	Milano	Borgata Leumann Torino	200	---	Paolini Umberto	Nodari ing. Remo
Stabilimenti di Amianto e Gomma Elastica gia Bender & Martiny	Nole Canavese (Torino)	Nole Canavese	120	---	Ferrabino Mario	---

5. Other Textile Firms

b. Carpet Firms

Name	Location of Headquarters	Location of Plants	Looms	Power Employed (H.P.)	Presidente	Consigliere Delegato
Manifattura Italiano Tappeti	Nole Canavese	Borgosesia Borgosesia (Vercelli)	100	200	Peretti Ettore	Magnoni Carlo
c. Dyeing Firms						
Candeggio e Tintoria di Nerviano	Nerviano	Nerviano	---	---	Ga o Felice	Alfiere dott. Amilcare
Carlo Bracco-Manifattura e Tintoria Saronnese	Milano	Saronno	---	---	---	(Unico Amministratore: Bracco Carlo)
Ditta Giovanni Garavaglia-Tintoria e Ritorcitura Soc. An.	Busto Arsizio	Busto Arsizio	---	---	Garavaglia Emilio	Garavaglia Giovanni
Fortuny	Venezia	Venezia	---	100	---	(Amministratore Unico: Faverio Abbondio)
Setificio di Pogliano	Pogliano Milanese	Milan Pogliano Milanese	---	100	Gianzana Mino	Cicogna dott. Furio
Societá per l'Industria della Tintoria Fratelli Pagani	Como	Como	---	---	Ricca rag. Argention	---
Tintoria Comense (Gia Gillet & Fils)	Milano	Como e Tavernola	---	---	Gillet Carlo	Walter Umberto
Tintoria e Mercerizzazione A. Faverio	Milano	Milano	---	---	---	(Amministratore Unico: Faverio Abbondio)
Tintoria Francesco Bonecchi	Rho	Rho	---	---	---	(Unico Amministratore: Bonecchi Eraldo
Tintoria Fratelli Banfi & C.	Milano	Milano	---	---	Ricca rag. Argentino	----

5. Other Textile Firms

c. Dyeing Firms

Name	Location of Headquarters	Location of Plants	Looms	Power Employed (H.P.)	Presidente	Consigliere Delegato
Tintoria Italiana	Milano	Milano	---	50	Treccani Giovanni, Senatore del Regno	---
Tintoria Lombarda	Milano	Como	---	270	Castelli Achille	---

d. Elastic Textile Firms

Name	Location of Headquarters	Location of Plants	Looms	Power Employed (H.P.)	Presidente	Consigliere Delegato
Centenari & Zinelli	Milano	Milano e Cividate al Piano (Bergamo)	1,040	180	Treccani Giovanni, Senatore del Regno	---

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5. Other Textile Firms

e. Furniture-Materials Firms

Name	Location of Headquarters	Location of Plants	Looms	Daily Production	Power Produced (H.P.)	Power Employed (H.P.)	Presidente	Consigliere Delegato
Copitra	Seregno	Seregno	33	---	---	10	Pirinoli Attilio	Cogliati Gildo
Englusalia	Milano	Vimodrone	86	---	---	180	---	(Unico Amministratore: Valle Enrico
Magnoni e Tedeschi	Cafasse Torinese	Borgosesia Cafasse Torinese Nole Canavese Seregno Villanova S. Vito	650	m. 12,500	750	1,000	Magnoni Carlo	---
Schmid (Fabbriche di Stoffe per Mobili ed Affini)	Milano	Cassolnovo Cavenago	355	---	---	200	Salmoiraghi ing Angelo, Senatore del Regno	Schmid Cristiano
Tessitura Meccanica Jacquard Giuseppe Radaelli	Monza	Monza Carugo	500	---	---	200	Radaelli dott. Giuseppe	Radaelli Franco

5. Other Textile Firms

f. Knitting Firms

Name	Location of Headquarters	Location of Plants	Machines	Power Employed (H.P.)	Annual Production	Presidente	Consigliere Delegato
Calze Emma San Miniato	San Miniato Basso	San Miniato Basso	Looms: 8	22	---	Celiberti Piero	---
Calzificio Amedeo De Nardi	Conegliano	Conegliano	261	200	---	De Nardi dott. Raffaello	---
Calzificio Carlo Doppieri	Milano	Novara	Circular: 260 Looms: 4	40	350,000 dozen	Varzi ca. Ercole	Doppieri Carlo
Calzificio Lombardo Aldo Bresaola	Milano	Brignano d'Addo	300	70	300,000 dozen	Bresaola Aldo	---
Calzificio Milanese Luigi Ciocca	Milano	Quinzano d'Oglio	340	60	---	Bertoletti Antonietta ved. Ciocca	---
Calzificio Morasso Carlo Fu Davide	Gavi	Gavi (Alessandria)	400	100	---	Morasso Carlo	Morasso Davide
Calzificio Torinese	Torino	Torino	300	80	120,000 dozen	Sacerdote Giuseppe	Sacerdote rag. Enrico
Errera	Milano	Novate Milanese	146	60	---	Errera Davide	Errera Guide
Manifattura Bustese Calze	Busto Arsizio	Busto Arsizio	Looms: 20 Auxiliary: 14	23	---	Borri Luigi	Masera Maria ved. Tosi
"N.O.V.A." Nuovo Opificio Valsusa Anonima	Milano	Susa	Looms: 12	40	---	Dupont Marziae	---

5. Other Textile Firms

g. Linoleum Firms

Name	Location of Headquarters	Location of Plants	Power Employed (H.P.)	Presidente	Other Data
Societa del Linoleum	Milano	Narni (Umbria)	600	Loria ing. Giacomo	

h. Mercerization and Bleaching Firms

Name	Location of Headquarters	Location of Plants	Power Employed (H.P.)	Presidente	Other Data
Candeggio Valle Olona	Marnate	Marnate Milano	---	Ceschina Gaetano	
Industria Mercerizzati entinti	Milano	Milano	---	Buratti Vittorio	
Lodovico Castagna	Como	Como	---	Castagna Vittorio	
Preparazioni Tessili	Milano	Saronno			Unico Amministratore: Castelli Achille

5. Other Textile Firms

i. Mesh-Goods Firms

Name	Location of Headquarters	Location of Plants	Machines	Power Employed (H.P.	Annual Production	Presidente	Consigliere Delegato
Bellia Bernardo & Figlio	Biella	Pettinengo	Circular: 100	50	---	Bellia Giorgio	(Amministratore delegato: Abate Giuseppe)
Daniele Bellavita	Milano	Milano	Circular: 56 Chain looms: 18 Preparation: 10 "Confezioni": 91 "Bobinoir": 12 "Teste tricoteuses": 112	65	---	Borletti dott. Senatore	Ghislanzoni avv. Paolo
Emilio Gallo & Fratello	Chivasso	Chivasso e Montanaro	looms: 120	250	---	---	(Unico Amministratore Gallo Attilio)
Fabbrica di Maglierie P Martinengo	Milano	Milano	looms 16 circular 180 sewing spools 40 other 30	95	---	Martinengo	---
Fabbrica Italiana di Maglierie Fini	Milano	Gorgonzola	16	30	30,000 dozen	Perego Ugo	Haim Maurizio
Guantificio Italiano G.I.M.	Milano	Biandrate Casalvolone	---	---	---	Conti rag Cesare	Trezzi Giuseppe
Imprese Commerciali e Industriali--Maglificio Santo Dasso & Figli	Genova	Pontedecimo	140	109	150,000 dozen	Ardissone rag. Vincent	---
Industriali Maglieficio di Biella	Biella	---	---	---	---	Fila Pietro Ettore	---
Lavorazione Lana	Genova-Voltri	Genova-Voltri	---	20	---	Vigo Agostino	Zanchi Andrea

5. Other Textile Firms

i. Mesh-Goods Firms

Name	Location of Headquarters	Location of Plants	Machines	Power Employed (H.P.)	Annual Production	Presidente	Consigliere Delegato
Maglificio A Boglietti	Biella (Vercelli)	Biella	285	300	---	---	(Amministratore Unico: Camagna rag. Evasio)
Maglificio di Borgomanero	Borgomanero	Borgomanero	hosiery: 35	25	---	Fantini Edoardo	---
Manifattura Maglierie Milano	Milano	Ferrara Reggio Emilia	machines & looms: 900	450	---	Henssler Emilio	---
Manifatture Peretti & C.	Torino	Torino Verolengo e Borgomanero	hosiery: 210 knitting: 155	150	gloves: 50,000 dozen stockings: 50,000 dozen hosiery: 60,000 dozen	Segrè rag. Emanuele	---
Michele Rolih	Genova	Pontedecimo	circular: 80	80	---	Rolih Michele	Rolih dott. Emilio
Pavesi e Volpato	Milano	Milano	50	50	---	---	(Amministratore Unico: Volpato Pietro)
"S.A.M.A."--S.A. Maglificio Angerese Forni e Piona	Angera	Angera	hosiery: 200	4	---	Rebuschini dott. Egidio	---
Santo Dasso & Figli	Genova	Pontedecimo e Cazzolo	---	40	hosiery: 150,000 dozen	Tassara ing. G.B.	Tassara dott. Filippo

5. Other Textile Firms

j. Wadding and Gauze Firms

Name	Location of Headquarters	Location of Plants	Power Employed (H.P.)	Presidente	Consigliere Delegato
Fabbrica Nazional Medicazione Antisettia--Dionigi Ghisio & Figli	Pavia	Milano Pivia	400	Ghisio dott. dionigi	Ghisio rag. Francesco detto Gino
"Sanitaria"	Milano	Milano Olgiate Olona	400	Caschina Renzo Ermes	Caschina Gaetano

APPENDIX C. THE PLANTS OF THE RAYON AND STAPLE FIBER INDUSTRY[1]

I. THE SNIA VISCOSA PLANTS

A. Torino Stura

Capacity: 24,000 tons of rayon and staple fiber annually. Staple fiber accounts for 75 percent of the total production of this plant.

Operatives: Total 5,000 at full capacity.

Location: The town of Abbadia di Stura is located eight kilometers northeast of Milan and the plant is located directly on the railroad from Milan to Setimo Torinese.

There are no other industries in the Torino Stura area.

B. Veneria Reale

Capacity: 15,000 tons of rayon and staple fiber annually. 75 percent of this plant capacity is devoted to the production of staple fiber.

Operatives: Total 2,500 to 3,000 at full capacity.

Location: Veneraria Reale is eight kilometers northwest of Milan. The plant is located 25 kilometers northeast of Veneria Reale, on the railroad from Milan to Alarzo Tor.

Special Characteristics: Veneria Reale plant has facilities for the production of carbonbisulphide; it also has a subplant engaged in the production of sulphuric acid.

There are no other factories, other than the Viscosa installation at Veneria Reale.

C. Pavia

Capacity: 13,500 tons of rayon and staple fiber annually. About 60 percent of this amount is accounted for by the manufacture of staple fiber.

Operatives: Total 2,400 at full capacity.

Location: In the southwest section of the village of Pavia, directly on the railroad running to Milan. The plant is .75 kilometers north of the Ticano River.

D Cesano Maderno

Capacity: 13,000 tons of rayon and staple fiber. Approximately 50 percent of the production is devoted to staple fiber manufacture.

Small quantities of lanital (2,700 tons) annually are produced at this plant.

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[1] Nearly all of the data presented in this Appendix were generously supplied by Erwin O. Anderson of the Economic Warfare Section of the Department of Justice. Some of the estimates, however, -- particularly those on the capacity of individual plants -- differ from those presented in the material obtained from Mr. Anderson and he might therefore rightly disclaim all responsibility for them. In any case, it should be admitted that the concept of "full capacity" of a rayon and staple fiber plant is rather rough and relatively meaningless unless the exact specifications (denier, etc.) of the fibers produced are defined, because the scale of output of any given plant is very flexible and depends to a great extent on the specifications of the fibers which are being produced. The estimates of the "capacity" of the individual plants were made after taking into consideration the relative importance of the various types of rayon and staple fibers which were produced in Italy in 1942.

D. Cesano Maderno (cont.)

Operatives: Total 2,500 at full capacity.

Location: On the southern periphery of the town of Cesano Maderno. The plant is located on the main railroad running from Milan to Serengo.

The village of Cesano Maderno is a furniture manufacturing center, but the Snia Viscosa installation is the largest in this area.

E. Casale Monferrato

Capacity: 7,500 tons of rayon and staple fiber per year, 40 percent of which is devoted to staple fiber.

F. Ceriano Laghetto

Capacity: 6,500 tons of rayon and staple fiber per annum.

Operatives: Total 2,500 at full capacity.

Location: The plant is located .25 kilometers southeast of the village of Ceriano Laghetto on the railroad running from Novara, Saromno to Serengo.

Special Characteristics: The plant has facilities for the production of sulphuric acid.

G. Magenta

Capacity: 6,500 tons of rayon and staple fiber annually, of which rayon constitutes the bulk of the output.

Operatives: Total 2,500 at full capacity.

Location: The plant is located in the southwest section of the city of Magenta and covers an area of 158,464 meters. The installation is located on the main railroad from Novara, Trecate, to Rho.

The city of Magenta contains one other large textile installation known as Manifattura Tosi, which produces 22,000 yards of finished textile goods per day.

H. Varedo

Capacity: 6,500 tons of rayon and staple fiber per annum, 90 percent of which is accounted for by staple fiber manufacture.

Operatives: Total 2,400 at full capacity.

Location: The plant is located in the western portion of the city of Varedo, which is 15 kilometers northwest of Milan. The installation is directly adjacent to the railroad running from Milan to Serengo.

There are no other plants in Varedo other than the Snia installation.

I. Aquila

Capacity: 4,000 tons of rayon and staple fiber per annum; the greater proportion of the production is in the form of rayon.

Operatives: Total 2,000 at full capacity.

I. Aquila (cont.)

Location: Plant is located at Aquila which is 25 kilometers southwest of Rieti.

There are no industrial installations in Aquila other than the Snia plant.

J. Cismon del Grappa

Capacity: 4,000 tons of rayon and staple fiber per annum. The proportion of rayon to staple fiber production is about equal.

Operatives: Total 1,800 at full capacity.

K. Snia Viscosa Machine Factory, Turin

Capacity: The Snia Viscosa Machine Factory, formerly the Diatto Automobile Works, is the largest producer of chemical and textile machinery for the synthetic textile industry in Italy.

This plant produced the bulk of the machinery for the Snia Viscosa plants at Veneria Reale, Torino Stura, and Torre di Zuino. In addition, it has provided machinery for the expansion of the plants at Magenta, Pavia, Varedo, and Cesano Maderno.

The factory is known to have produced the following apparatus: steeping presses, shredders, air-conditioning machinery, xanthate machines, filter presses, spinning tanks, spinnerets, spinning and twisting machines, wash tanks, cutting machines, air compressors, and caustic soda recovery apparatus.

Operatives: Total 2,500 at full capacity.

Location: The plant is located in the northwest section of the city of Turin, 200 meters due west of the Piazza Nazario Sauro.

L. Torre di Zuino

Torre di Zuino is a development of the Societa Agricola Industriale per la Produzione Italiana di Cellulose, a subsidiary of Snia Viscosa. The purpose of the plant is to achieve a measure of self-sufficiency in cellulose for the Snia Viscosa Combine.

Cultivation of cane: About 6,000 hectares of land near the plant have been planted in cane (Aruno Donax) which is harvested and converted into bleached sulphite pulp. It was hoped that expansion of the cultivation of cane would eventually make Italy independent of foreign sources of cellulose. It appears that difficulties have arisen in the execution of this plan, because the Torre di Zuino pulp plant has had to import large quantities of wood from foreign sources.

Output: Output of bleached sulphite pulp is estimated to be 70,000 tons per year.

Pulp Plant: The pulp plant is composed of an uninterrupted sequence of buildings built on an east-west axis, with a total volume of 14,120,000 cubic feet. The largest building, which serves as a housing for the rifflers, washing tank, bleaching apparatus, drier section, and Forerdiner machine, has a frontage of 5,280 feet. The tallest building is the acid tower (177 feet) which is flanked by two digester housings with a height of 131 feet.

L. Torre di Zuino (cont.)

Power:	The plant generates its own power at a thermo-electric installation on the premises, from coal which is obtained from the nearby Arsia pits. The plant generates 3,000 kilowatts.
Transportation:	The plant has a railroad terminal. Its raw materials and finished products, however, are moved almost entirely by water. The Banduzzi Canal, which connects with the Adriatic Sea, was widened to accommodate this traffic.
Operatives:	Total 3,600 agricultural workers and 1,500 factory workers.
Location:	The plant is located near a small village known as Torre di Zuino (about 20,000 population) which is the center of a marshy tract lying between S. Giorgio di Nogaro and Cervignana. It is near the large international railway artery that goes from Venice to Trieste and the Balkans.

M. Naples

In 1939, Snia Viscosa acquired a controlling interest in the Cisa Viscosa concern Commerciale Italiana Soc. An. per il Raion. The Naples plant is an operating unit of the Societa Meridionale Industrie Tessili, a subsidiary of Cisa, and is thus now controlled by Snia Viscosa.

It has been reported that this plant was completely destroyed by bombing and that no attempt has been made to reconstruct it.

Capacity:	Prior to its demolition, the plant had an annual capacity of nearly 15,000 tons of staple fiber.
Operatives:	When working at full capacity, the plant employed ,400 workers.
Power:	The plant utilizes public power received from the Societa Meridionale di Electtricita.
Location:	The factory is located at San Giovanni a Teduccio, a suburb in the southeastern section of Naples. The Cisa plant is the only industrial in this area.

N. Rieti

The Rieti plant is an operating unit of the S. A. Supertessile, which is an affiliate of Cisa. Cisa, in turn, is controlled by Snia Viscosa.

Capacity:	At full capacity, the plant could produce 20,000 tons of rayon and staple fiber per annum.
Operatives:	At full capacity, about 5,000 workers would be employed.
Power:	The Rieti plant receives its entire power requirements from the public power station known as Societa Terni at Rieti.
Location:	The plant is located 1.25 kilometers northeast of the city of Rieti.

O. Rome

This plant is an operating unit of the Societa Generale Italiana de La Viscosa, a subsidiary of Cisa, which, in turn, is controlled by Snia Viscosa.

Capacity: Capacity is estimated at 9,000 tons of rayon and staple fiber annually.

Operatives: At full capacity, the plant employs 3,000 workers.

Power: The plant maintains its own power house, but receives auxiliary power from the Soc. Romana di Electritticita, a public power system.

Location: The plant is located two miles from the main railroad station in Rome, on the main railroad from Rome to Naples, going south to Naples.

P. Padua

The Padua plant is an operating unit of the Societa Generale Italiana de La Viscosa, which is an affiliate of Cisa; as has been stated above, Cisa is controlled by Snia Viscosa.

Capacity: At maximum capacity, the plant has an annual output of 3,500 tons of rayon. A large proportion of the output is high-tenacity rayon which is used for tire cords.

Operatives: The plant has 2,000 workers when it is operating at full capacity.

Power: The plant has its own power plant with steam turbines capable of generating 2,000 kilowatts. It also receives auxiliary power from Adriatica di Elettricita.

Location: The factory is located approximately 750 meters northeast of the center of the city of Padua, on the main highway going to Venice.

Q. Societa Anonima Susidiara Applicazioni Rayon

This company is a subsidiary of Cisa and is thus under the control of Snia Viscosa. It operates a rayon finishing plant at Cusano Milanino.

R. S. A. Umbra Prodotti Chimici

This company is a subsidiary of Cisa which in turn is controlled by Snia Viscosa. The company operates a carbon bisulphide producing plant at Terni.

S. Ufficio Tecnico Industriale Artificiale

This company is a subsidiary of Cisa and consequently is under the control of Snia Viscosa. The company operates a factory for the production of chemical and textile machinery and has supplied the bulk of the spinning and twisting machines installed in the Cisa plants. The Naples plant of Cisa, however, contains spinning machines built by Maurrer of Berne, Switzerland.

The plant is located at Este.

T. Chatillon

This plant is one of five (only four of which produce artificial fiber, however) belonging to "Chatillon," S. A. Italiana per le Fibre Tessili Artificiali. The Chatillon group is now controlled by Snia Viscosa, through majority stock ownership.

Capacity: The capacity of the Chatillon plant is estimated to be approximately 8,000 tons of rayon and staple fiber.

Location: The plant is located at Chatillon, near Aosta, in Piemonte.

U. Ivrea

The Ivrea plant is another one of the Chatillon group, which is now controlled by Snia Viscosa.

Capacity: The capacity of this plant is estimated roughly at 6,000 tons of rayon and staple fiber. The plant uses both the viscose and the acetate process.

Operatives: 2,500 workers.

Location: The plant is located in the town of Ivrea in Piemonte.

V. Vercelli

This plant also belongs to the Chatillon group which is now controlled by Snia Viscosa.

Capacity: Approximately 5,000 tons of rayon and staple fiber.

Location: The plant is located on the periphery of the town of Vercelli, which is on the main railroad from Milan to Turin. The town has no other industry.

W. Rho

This plant belongs to the Chatillon group which in turn is controlled by Snia Viscosa.

Capacity: The capacity of this plant is roughly estimated at 5,000 tons of rayon and staple fiber.

Operatives: Approximately 2,200 workers.

Location: The plant is located in the town of Rho.

X. Pogliano

This plant is a member of the Chatillon group, which is now controlled by Snia Viscosa.

Pogliano is not an artificial fiber-producing plant. Its operations are confined to winding, bobbing, twisting, and dyeing.

The plant is located at Pogliano.

Y. Additional Plants Controlled by Snia Viscosa

1. For weaving and processing rayon and staple fiber, plants at:

Reggio Emilia
Oggiono
Voghere
Desio
Torino
Ceriano Laghetto
Cusano Milanino
Altessano
Cocquio

V. Additional Plants Controlled by Snia Viscosa (cont.)

2. For the manufacture of textile machinery, plants at:

Terni Veneria Reale Ceriano Laghetto

II. PRODUCERS OF RAYON AND STAPLE FIBER OUTSIDE THE SNIA VISCOSA ORBIT

In 1942, there were only four producers of rayon and staple fiber outside the orbit of Snia Viscosa:

A. Gerli Industria Raion

Capacity:	This plant has a productive capacity of about 9,000 tons of rayon and staple fiber. The viscose process is used.
Operatives:	Nearly 2,000 workers are employed when the plant operates at full capacity.
Location:	The plant is located at Cusano (Milan).

B. Orsi Mangelli Industria Raion

Capacity:	Productive capacity is approximately 7,000 tons of rayon and staple fiber. The viscose process is employed.
Operatives:	About 1,500 workers are employed when the plant operates at full capacity.
Location:	The plant is located at Forli, near Bologna.

C. Societa Rhodiaceta Italiana

Capacity:	Approximately 3,500 tons of rayon and staple fiber annually when working at full capacity. The acetate process is employed.
Operatives:	About 1,500 workers when the plant is operating at full capacity.
Location:	The factory is located at Pallonza, near Novara in Lombardia.

D. Seta Bemberg

Capacity:	Maximum output of rayon and staple fiber is slightly above 2,000 tons per year. This plant uses the cuprammonium process and is the only factory using the process in Italy.
Operatives:	About 1,500 workers are employed.
Location:	The factory is located at Gozzano, near Novara in Lombarida.

APPENDIX D. OFFICERS AND DIRECTORS OF SNIA VISCOSA[1]

The ensuing section will develop an account of the personalities closely connected with the Snia Viscosa enterprise. Any individual who is thought to have influence either by virtue of his political or managerial position or by virtue of his proprietary interest will be discussed.

A. Riccardo Gualino

Gualino was the founder of Snia Viscosa, and was the author of mergers and agreements which resulted in the establishment of the world position of Snia Viscosa. He was actively associated with the corporation from its inception until 1933.

In 1933, Gualino and Gurgo Salice, his assistant manager and brother-in-law, were confined in a concentration camp. After two years of confinement, he was released in 1935 subsequently to become a close financial adviser to Mussolini. He has since become the leading figure in Ruminaca Chemical Company. Gualino is reported to harbor tender feelings for the Italian rayon industry and can be expected to attempt, with his newly-acquired fortune, to resume his affiliation with that industry.

Gualino, properly speaking, is not a technical man. His diversified career as a shipping operator and rayon and chemical producer suggests that his talents are, for the most part, those of a rentier and promotor.

B. Guieseppe Gavazzi, Milan

In 1929, Vereinigte Glanzstoff and Courtaulds acquired a majority interest in Snia Viscosa. The new foreign shareholders undertook to reorganize Snia Viscosa on a sounder financial basis. Gualino had expanded the productive facilities of the corporation beyond the point where the output could be absorbed. Gualino's speculative policy was replaced by a policy of recession, the production of Snia Viscosa was cut, and the capitalization of the corporation was reduced one-third.

To effect this reorganization in the Snia Viscosa Combine, Gualino was deposed by the British-German interests and Guieseppe Gavazzi was installed as the president of the corporation. Gavazzi, by all accounts, was a mere figurehead for the British-German interests and is described as "an honest silk merchant."

Gavazzi, however, did not exercise sufficient influence with the

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[1] United States Department of Justice, Economic Warfare Section. Supplemental Report on Snia Viscosa, Erwin Anderson.

Italian Fascist Regime. Glanzstoff and Courtaulds, wishing to secure authorization for free Italian currency so that dividends might be paid, approached the Italian Government to determine who might be acceptable to the regime.

The Italian Governmental authorities indicated that Senatore Borletti and Franco Marinotti would be acceptable to them and that, in return for the cooperation of Glanzstoff in installing these individuals as managers, the foreign interests might expect the release of free currency to pay dividends on their investments. The governmental authorities also exacted an agreement whereby a large block of voting shares held by Glanzstoff and Courtaulds should be offered for sale to Marinotti and Borletti. The entire transaction was consummated in 1929.

C. Franco Marinotti, Milan

From 1929 until August 7, 1943, Franco Marinotti was, successively, General Manager, Chairman of the Board of Directors and President of Snia Viscosa.[1]

Marinotti was of humble origin, and began his career in 1912 as manager of a silk spinning plant in Warsaw, which was owned by the International Silk Waste Cartel. During World War I and subsequent to the Russian Revolution, he had carried on extensive activities as a smuggler on the Finnish frontier. He succeeded in bringing property of White Russians across the frontier and before being apprehended, escaped through Siberia to China and then returned to Italy.

It will be recalled that the Fascist Regime in Italy was one of the first to encourage trade relations with the Soviets. When Senatore Borletti sought to set up an exclusive trade organization with Russia he elected as his first assistant Franco Marinotti because of his familiarity with the Russian market. Marinotti became the manager of CICE (Compagnia Italiana Commercio Estero), which enjoyed a monopoly of all trade with Russia. Both Marinotti and Borletti acquired a considerable fortune while operating this company.

After Marinotti assumed leadership of the Snia Viscosa Combine under the auspices of the Fascist Regime, it became clear that the same regime intended Marinotti to be the titular head of the rayon and staple fiber industry in Italy.

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[1] A London despatch for August 7, 1943, indicated that 33 prominent Fascists had been arrested by the Badoglio government for war profiteering, among them the officials of Snia Viscosa.
On July 30, 1943, the American Legation at Bern, Switzerland, reported that they had been advised that Marinotti was in hiding from Italian governmental

As head of the Snia Viscosa Combine, Marinotti skillfully played Courtaulds and the Italian Government against one another. He completed arrangements for the release of Italian funds so that dividends might be paid to Courtaulds, while at the same time, he reassured the Fascist authorities that only through his continued affiliation with Snia Combine could the Italian Government be assured of the de facto control of the organization.

There is evidence that the government offered Marinotti a preferential option for the purchase of Chatillon, held by the Banca Commerciale when the government assumed control of that organization; further, that the Italian authorities put pressure on the Gillet-Bernheim interests in France to sell outright to Snia Viscosa their majority holdings in Cisa Viscosa. The aforementioned mergers and sales resulted in Snia Viscosa's having a virtual monopoly in the production of rayon and staple fiber. Because of Snia's preeminence in the production field, Marinotti was presently able to control Italrayon and the Federation of Producers of Synthetic Textile Fibers, resulting in a similar domination of the export market.

Prior to Mussolini's resignation, Marinotti was Vice Mayor of the City of Milan, the Chief of the Lombardy Province, and a member of the Fascist Council of Corporations.

D. Donnagemma, Milan

In 1933, Donnagemma participated with Borletti and Marinotti in the purchase of Snia Viscosa shares which were offered by Courtaulds under pressure by the Italian Government for their sales to domestic interests. Donnagemma was one of the original backers of the Fascist Regime and was on excellent terms with the government as is reflected by the fact that he was made custodian for all vested shares of Snia Viscosa owned by foreign interests.

E. Melli was salesmanager for Italviscosa which is as has been indicated completely dominated by Snia Viscosa. Melli is on excellent terms with Marinotti and, although a Jew, he has been tolerated by the Fascist Regime because of his war service and his marriage to Donnagemma's daughter.

F. Senatore Borletti, Milan

From 1933 until his death in 1941, Senatore Borletti was Chairman of the Board of Directors of Snia Viscosa. He initially assumed this position under the auspices of the Fascist Regime, which indicated to Courtaulds that he would be a desirable member of the company.

Borletti, who made his fortune during World War I as a producer of precision machinery, had interested himself in CICE, previously identified as having a monopoly of Italian trade with the Soviets. Borletti was also sole owner and operator of the La Renascente Societa Anonima and UPIM (Unico Prezzo Imprese Mercantili), which companies operated the only chain department stores in Italy.

Senatore Borletti was one of the early supporters of the Fascist Regime and was a heavy financial contributor to the founding fund of the Party. He became a Senator of the Kingdom in 1930.

G. Ferdinando Borletti, Milan

Brother of Senatore Borletti, Ferdinando is a member of the Board of Directors of Snia Viscosa and was associated with his brother in all of the aforementioned activities. He was an active supporter of the Fascist Regime.

H. Dr. Romauldo Borletti, Milan

Son of Senatore Borletti, Romauldo was his father's successor on the Board of Snia Viscosa.

I. Baron Alberto Fassini, Rome (Deceased)

Member of the Board of Directors of Snia Viscosa from 1939 to 1942, Fassini originally was the President and Chairman of the Board of Cisa Rayon which was acquired outright by Snia Viscosa from the Gillet-Bernheim interests in 1939, by the exchange of shares of Snia Viscosa and Cisa Rayon.

Fassini had been associated with the latter company from 1912 until the date of its amalgamation with the Snia Viscosa Combine and was, like the majority of the leaders in the synthetic textile industry, an ardent supporter of the Fascist Regime.

J. Francesco Mario Odasso, Rome

A member of the Board of Directors of Snia Viscosa since 1941. He was formerly Chairman of the Board of Directors of Societa Generale Italiana della Viscosa, a subsidiary of Cisa Viscosa.

Both Fassini and Odasso became members of the Snia Viscosa organization by agreement with the Gillet-Bernheim interests,[1] who informally stipulated that the main officers of Cisa Viscosa should remain with that organization after it was amalgamated with Snia Viscosa. Fassini and Odasso were, in effect, to protect the Gillet-Bernheim interests in Snia Viscosa.

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[1] For convenience, the French corporation known during the pre-war period as Gillet-Bernheim, will continue to be referred to by that name. After the occupation of France, Bernheim, because of his Semitic origin, was forced to relinquish his interests in the Gillet-Bernheim Combine and currently is living in Switzerland.

Odasso's own motives for joining the Snia Viscosa organization are alleged to have been the desire to look after the former Cisa employees and in some fashion to oust Marinotti whom Odasso thoroughly dislikes.

Although Odasso was a member of the Fascist Party, as were all functioning business men, it is alleged that he persisted in the belief in liberal democratic traditions.

K. Carlo Abegg, Zurich, Switzerland

Member of the Board of Directors of Snia Viscosa since 1930, Abegg is an internationally known cotton merchant and sole owner of Contifici Val di Sysa, Turin, Italy and of Abegg and Company, Zurich, Switzerland.

In 1929, during the reorganization of Snia Viscosa under the auspices of Glanzstoff and Courtaulds, Ltd., Abegg purchased a large block of Snia's shares. Abegg is also a close friend of Ennemond Bizot of the Comptoir des Textiles.

Abegg is said to be extremely hostile to the Nazi Regime. He apparently has condescended to remain on the Board of Snia Viscosa despite its pronounced Fascist character in order to obtain a preferential position in the purchase of staple fiber which is used in his cotton fabricating plants.

L. Raimondo Targetti, Milan

Member of the Board of Directors of Snia Viscosa, Targetti is an internationally known wool manufacturer. He is a close friend of Marinotti and was associated with him in CICE, through which he exported a large proportion of his wool manufacture to Soviet Russia. Targetti also represents the wool weaving interests on the Board of Snia Viscosa which have since 1931 been completely dependent upon staple fiber for the continuation of their industry.

Targetti is believed to have been a member of the Fascist Party for business reasons only.

M. Carlo Frua, Milan

Member of the Board of Directors of Snia Viscosa, Frua is an internationally known cotton manufacturer, the owner of Di Angela Frua, and a representative of the cotton industry on the Snia Viscosa Board. He is also an important shareholder in the largest Italian newspaper, the Corriere della

Sera, and of Sócieta Anonima Breda, manufacturers of armament, munitions, airplanes, automotive parts and precision machinery.

Carlo Frua is reputed to have been an ardent member of the Fascist Party.

N. Guido Viscomte Di Madrone, Florence

A member of the Board of Directors of Snia Viscosa, Senatore Madrone is described as a figure-head whose presence on the Board is explained as a concession to the provincialism which exists in Italian business. He represents one of the old Milanese families and was installed on the Board of Directors when Snia Viscosa moved its headquarters from Turin to Milan.

O. Guililio Sessa, Milan

Private banker. Political attitude and details unknown.

P. Antonio Ferretti, Milan

A member of the Board of Directors of Snia Viscosa, Ferretti is the inventor of the Lanital Process for the production of staple fiber. His association with Snia Viscosa began when he was made manager of the plant at Cesano Maderno for the introduction of this process.

Ferretti is described as a typical technician, utterly a-political and willing to make peace with any organization which in turn will exploit his numerous inventions.

Q. Aldo Marinotti, Milan

Aldo, brother of Franco Marinotti, became a member of the Board of Directors of Snia Viscosa in 1940. He is the owner of a large trucking firm, and has no knowledge of the synthetic fiber industry. His political complexion is said to be similar to that of his brother.

R. Senatore Rebeaudengo, Turin

Senatore Rebeaudengo, aged 80, has been a member of Snia Viscosa's Board of Directors since 1919. Because of his difficult financial position, he has been willing to lend his prominent name to what to his mind is essentially an "upstart" organization.

Rebeaudengo is reported to be a Monarchist and in no sense a Fascist.

S. Arthur Johnson, Paris

A member of the Board of Directors of Snia Viscosa until 1940, Johnson was a representative of the Courtaulds' interests on the Snia Viscosa Board.

T. Y. I. Spens, London

A member of the Board of Directors of Snia Viscosa until 1940, Spens was a representative of Courtaulds' interests on the Snia Board.

U. B. Stanley, London

A member of the Board of Directors of Snia Viscosa until 1940, Spens was a representative of Courtaulds' interests on the Board.

V. J. Hanbury-Williams, London

A member of the Board of Directors of Snia Viscosa until 1940, is General Manager of Courtaulds, Ltd., and is also a Director of the Bank of England.

Hanbury-Williams has been exceedingly close to the management of Snia Viscosa since 1929, and is reported to have considered the Borletti-Marinotti management entirely satisfactory. He has been the author of extensive collaboration with the French, Dutch, German and Italian rayon industries and has vigorously extneded the sphere of the Courtaulds influence over the entire European synthetic fiber industry.

W. Ennemond Bizot, Paris

Ennemond Bizot and Charles Gillet constitute the managerial group of the Comptoir des Textiles Artificiels, France.

Bizot is of interest because he has constantly acted as liaison man between the Gillet-Bernheim interests and Snia Viscosa, the fruits of which resulted in the exchange of shares between Cisa Viscosa and Snia Viscosa, whereby the latter company gained outright control of the former.

Bizot is married to the elder Gillet's daughter and, since Gillet's death in 1942, he has assumed the leading position in Comptoir, which continues to own a large block of Snia Viscosa shares. During the Italian neutrality period following World War II, Bizot was head of the French Purchasing Committee in Rome. In 1942, after the fall of France, Bizot moved to Paris, operated the mills located in the occupied territory, and his uncle Charles Gillet was in Lyon operating the mills in unoccupied France. Bizot is described by his most chartiable friends as an intelligent opportunist, whose political credo is "Pro-Bizot."

X. Gustavo Fabbri, Rome (Not to be confused with Silino Fabbri, of Milan).

As chief attorney for the Cisa Viscosa organization, Fabbri has an intimate knowledge of the transactions, contracts and agreements performed by Cisa and Gillet-Bernheim with Snia Viscosa. He is an individual who would know definitely the whereabouts of the outstanding Snia Viscosa shares. He would also have knowledge of the manipulations performed with shares during the war period.

APPENDIX E. GLOSSARY

Basins:	Containers of warm water in which cocoons are soaked during the process of reeling the silk.
Bleaching:	The process of freeing textile fibers and fabrics from their natural color and rendering them white or nearly so.
Calendering:	A finishing process producing various light-reflecting properties on the textile surface by means of heated rollers.
Cocoon-cooking and -drying plants:	Establishments in which cocoons are heated for several hours in a high temperature oven in order to kill the chrysalides (pupae) contained within.
Combs:	Machines designed to straighten the fibers of wool, laying them parallel and eliminating the noils, or short fibers.
Ends and picks per inch:	A method of measuring the fineness or coarseness of weave by counting the number of warp threads (ends) or weft threads (picks) in one inch of the fabric.
Filament:	The term given to each single strand of the several which constitute a thread of rayon or silk yarn.
Filature:	A reel on which silk is wound as it is unraveled from the cocoon.
Finishing:	The imparting of special characteristics to certain makes of cotton goods to give them a resemblance to linen, wool or silk. Also the imparting of special qualities to the face or body of a woolen or worsted fabric.
Flax:	Fiber from the plant "Linum usitatissimum" from which linen is made.
Gilling:	Process used in the manufacture of worsted yarns after combing; "gill-boxes" are used to straighten and draw or attenuate the fiber into a top.
Grease wool:	Wool in its natural state, as it comes from the sheep's back with all the grease and other impurities attached to it.
Grey goods:	A generic term, covering all unbleached cotton fabrics.
Hemp:	The fiber from the stalk of the plant "Cannibis sativa," of quality inferior to flax but stronger and easily bleached, called "common hemp." The term "hemp" also is used to include a variety of fibers similar to common hemp but from different sources. The fiber is used in ropes and coarse textiles such as sailcloth.
Jute:	An Indian hemp-like fiber from the plant "Corchorus capsularis," very strong, lustrous, fine, and used chiefly for canvas bags, cordage, mats, and wrappers.
Lanital:	(from Lana Italiana). Italian artificial wool made from casein.
Loom:	The machine used for weaving fabrics by interweaving a set of warp threads with the weft which is usually inserted one pick, or weft, at a time.
Middling cotton:	In grading cotton according to quality of fiber, that grade intermediate between "fair" (the best grade) and "ordinary" (the poorest grade). Middling cotton is the grade universally used as a basis for cotton trade, and on which the price of cotton is fixed.

Rayon:	The generic name of filaments made from various solutions of modified cellulose by pressing or drawing the cellulose solution through an orifice and solidifying it in the form of a filament or filaments (solid or hollow) by means of some precipitating medium.
Recovered wool or reclaimed wool:	Wool obtained by converting woolen rags into fibers by tearing them up and reworking them again.
Reeling:	The process of unraveling cocoons and winding the resulting continuous strand of silk on filatures.
Scoured wool:	Wool washed clean of grease, soil, and other impurities.
Shoddy:	Roughly speaking, the same as recovered or reclaimed wool.
Spindle:	A finely tempered tapered length of steel fitted with a whorl by which it is rotated, and which is used in spinning for imparting twist to the thread, the twisted thread being wound either on the bare spindle or on a paper tube or wooden bobbin.
Staple fiber:	Rayon filament cut into staple lengths suitable for spinning either on cotton, woolen or worsted spinning machinery.
Top:	A continuous untwisted strand of longer wool fiber from which the shorter fibers or noils have been removed by the worsted combs. After the longer fiber or top comes from the worsted combs, it is run through a series of "gill-boxes," where the fibers are straightened and finally would into a ball of 5 to 15 pounds, which is the commercially known "top."
Twister or twisting frame:	An implement or device used for twisting two or more single yarns together into cords and winding them on a bobbin.
Virgin wool:	Wool shorn from live sheep or pulled from sheepskins and not previously manufactured.
Warp:	Lengthwise threads or yarns in a cloth.
Weft:	Crosswise threads or yarns in a cloth.
Woolens:	Yarns spun without undergoing a process to parallel the fibers; as a result, the fibers are criss-crossed and do not lie in any general order.
Worsted:	Yarn spun from top. The wool fibers are paralleled and equalized, and the yarn is smooth compared with woolen yarns.

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